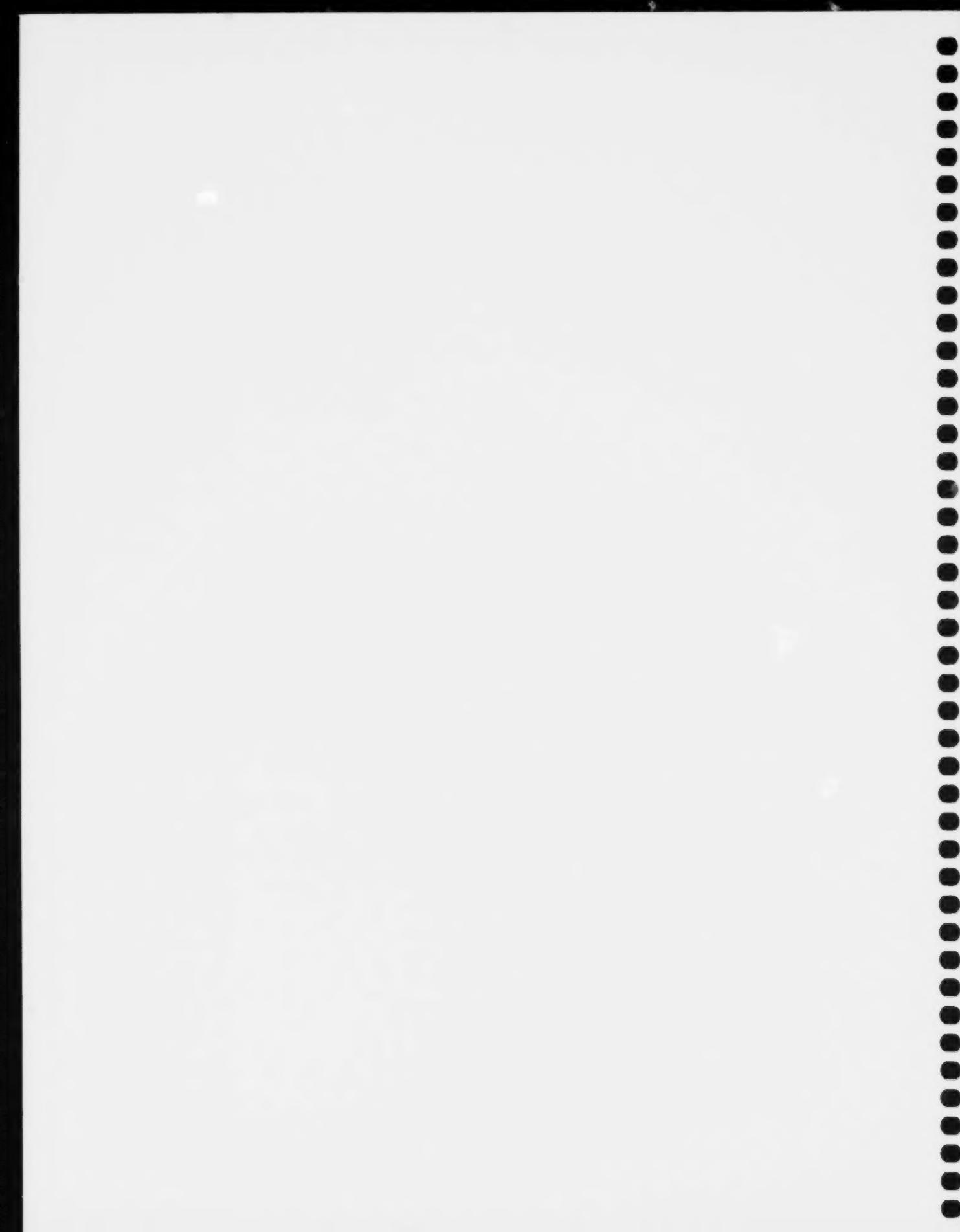# Automated Hunting and Angling Licence Solution Feasibility Study

August 2008

Saskatchewan
Ministry of
Environment

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1.   Executive Overview

For centuries, Saskatchewan's bountiful natural resources have been a source of nourishment for the mind, body and soul of hunters and anglers. The geographic regions in Saskatchewan; from the vast, open plains found in the southern grasslands, through the bluffs and meadows of the parklands, to the secluded wilderness and picturesque waterways of the boreal forests of the north, provide generous homes of abundance for diverse populations of wildlife and fish. The Ministry of Environment, as a steward of natural resources in Saskatchewan, dedicates their work to protect and conserve the animal populations and their supporting habitats.

The plains of western Canada were once home to a large population of bison. The bison were a primary source of food, clothing and shelter for the First Nations peoples. The bison population was but a small part of a balanced and self-regulating ecosystem on the western plains where people and animals co-existed in a symbiotic relationship.

As the western world opened up to new business opportunities and settlers, the bison were killed in the name of 'sport'. There was no stewardship, no regulations, no hunting seasons, no licensed hunting, and no compliance or enforcement in place. Within a few short years, the bison population was devastated, nearly to the point of extinction. The source of food, clothing and shelter for the First Nations peoples was destroyed, creating starvation and homelessness situations for those peoples. The balance of the plains ecosystem shifted dramatically in a very short period of time, the symbiotic relationship between humans and animals was destroyed.

Although it came too late to save the bison populations, once the information was received and understood, the need for human intervention became clear. Action was taken to introduce stewardship programs to protect our animals from over-harvest. The Government introduced rules, regulations and programs to help protect and manage animal populations and their habitat. The inability to obtain quality information, analyze it, make decisions and take action in a timely manner was detrimental to the bison population and the human population alike.

Hunting and angling seasons have been established to ensure animals may procreate; the young may grow to maturity; and species are allowed to regenerate with relative safety and security from human disruption. A large part of the protection and management of these natural resources is the requirement that hunting and angling activities be conducted only by licensed individuals.   All these measures are in place to ensure that specific animals are not over-harvested and populations remain viable. In turn this ensures that the natural resources will continue to enchant those who wish to experience the rare opportunities to interact with the natural world of Saskatchewan.

Saskatchewan is known world-wide for its trophy game and fish resources and is a focal point for hunters and anglers on the international stage. The economic impact generated from hunting and angling brings millions of external dollars into our province annually. This economic impact is significant and has been well documented (references: *Economic Evaluation of Saskatchewan's Commercial and Non-Outfitted Sport Fishing December 2006, Economic Evaluation of Saskatchewan's Outfitted Hunting and Fishing Industry December 2006,* and *Economic Evaluation of Hunting in Saskatchewan December 2006*). This economic success is due, in part, to the careful and persistent management of our natural resources over a long period of time, including the province's ability to offer and issue hunting and angling licences.

The administration of hunting, angling and fur licences is a major undertaking for the Saskatchewan Ministry of Environment, requiring hundreds of thousands of dollars in investment annually and

hundreds of people to support. Technology tools are available which can reduce the Ministry's annual investments in time and money and improve the Ministry's ability to manage the Province's natural resources.

In review of the Ministry's hunting, angling and fur licensing processes, four (4) main value propositions have served as an overarching theme:

Value Proposition 1: Natural Resource Management

It is the Ministry of Environment's responsibility and mandate, to protect and steward this provinces natural resources. In order for the Ministry to perform this activity, it requires timely and accurate information, the ability to analyze the information, make decisions and to act on those decisions.

Value Proposition 2: Customer Service

Hunters, anglers and trappers play a large role in the Ministry's ability to manage our natural resources. Over population of animals encourages the introduction of disease, excessive animal starvation, and increased populations of predator species. The licensing of hunters, anglers and trappers enable the Ministry to more closely manage animal populations. Hunters, anglers and trappers are the Ministry's 'customers', and they require access to licences and related services to allow them to conduct their respective activities as a partner in the ongoing natural resource management for Saskatchewan.

Value Proposition 3: Compliance and Enforcement

As with any rules-based activity, a small percentage of people will choose to by-pass or ignore the established rules. It is the Ministry's responsibility and mandate to monitor compliance and take enforcement action to uphold the established rules, including the rules in place for hunting, angling and trapping licensing. Once again, access to timely, accurate information enables the Ministry's Compliance and Enforcement personnel to analyze information, make decisions and take action.

Value Proposition 4: Financial Administration

The preparation, allocation, and issuance of hunting, angling and fur licences require that financial transactions are performed. The Ministry is responsible to account for each financial transaction and understand the value of its assets and liabilities related to the licensing function. Detailed data for analysis, financial reporting, decision making and action is required in a timely fashion to ensure the Ministry can remain accountable for its use of public funds.

Steeped in tradition and lessons learned from the past, it is clear that the management of Saskatchewan's natural resources must be performed. The Ministry of Environment must be responsible and accountable to the public. This feasibility study identifies and studies options on how the Ministry may best fulfill its mandate as a steward of Saskatchewan's natural resources.

2.   Stakeholders

2.1.   Customers

The Ministry of Environment's customers are hunters, anglers and trappers who wish to hunt, fish or trap within Saskatchewan. Specific licences are issued by the Ministry, to customers, based upon the activities they wish to carry out. Location, species, the period of time in the year, the customer's age and the customer's residency status are factors determining the type of licences issued.

A customer's main licensing requirement is to be able to obtain the correct licence with ease. At present, customers may obtain licences from licence vendors (currently there are approximately 700 licence vendors within Saskatchewan), Ministry of Environment offices (currently there are 59 Ministry of Environment customer service offices in Saskatchewan), by telephone, mail or online at the Ministry of Environment web-site (with a 3-4 week delay as the licence is physically sent to the customer), or through the Big Game Draw program. In special situations, some habitat certificates and/or licences may be issued from other locations by Conservation Officers.

Customer complaints related to hunting and angling licences are received at the Ministry of Environment. Many customer complaints are related to difficulties experienced by customers in their efforts to obtain the correct licence from a licence vendor. Many complaints also relate to the length of time necessary for licences to be received through telephone, mail or web-site licence requests. Additional customer complaints are related to the sticker-paper seals/tags which some customers find difficult to use in field conditions.

2.2. Hunting and Angling Licence Vendors

All hunting and angling licences are issued through Ministry approved licence vendors. As at July 2008, there were 674 private sector business licence vendors and 60 Ministry of Environment vendors (734 total vendor locations) where hunting and/or angling licences were available. Licence vendors are geographically distributed throughout the province of Saskatchewan to enable convenient, in-person, access to hunting and angling licences for the public.

Customers may apply for licences online. The Ministry's Estevan field office acts as the vendor for all online licence applications.

Customers may apply for licences by telephone or through the mail. The Ministry's Regina field office acts as the vendor for all telephone and mail licence applications.

The Ministry's Fish and Wildlife Branch administers the Big Game Draw program. In this case, the Fish and Wildlife Branch acts as a vendor to issue habitat certificates and hunting licences to successful Big Game Draw applicants.

2.3. Ministry of Environment – Finance and Administration Branch

The Finance and Administration Branch of the Ministry is responsible to: establish vendors, allocate licences to vendors, process vendor remittances and financial transactions, and archive licences. Approximately five (5.0) full time equivalent Finance and Administration staff members work to administer hunting and angling licences.

2.4. Ministry of Environment – Compliance and Field Services Branch

The Compliance and Field Services Branch works to protect the province's natural resources. This work includes ensuring that hunters, anglers and trappers comply with the rules and regulations associated with hunting, angling and trapping. Hunting and angling licences are instrumental tools which assist the Compliance and Field Services staff members to monitor compliance, investigate violations, and enforce fish and wildlife legislation and regulations.

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2.5.   Ministry of Environment – Fish and Wildlife Branch

The Fish and Wildlife Branch are responsible for the conservation of the fishery and the wildlife resources in Saskatchewan. Fish and wildlife resource management planning is a key activity performed by the Branch. Resource planning includes defining seasons, zones, and limits for all hunting and angling activities within the province. Licensing of these activities is instrumental to the conservation of fish and wildlife, as well as a mechanism to ensure the public has ample recreational opportunity to hunt and fish in Saskatchewan.

Further, the Fish and Wildlife Branch administers the Big Game Draw in Saskatchewan. Select big game hunting licences are allocated through the Big Game Draw program. Hunting and angling licence automation will impact the administration of the Big Game Draw.

2.6.   Ministry of Environment – Field Offices

There are 59 Ministry of Environment field offices distributed throughout the province of Saskatchewan. These offices provide a variety of Ministry services to the public, including the issuance of hunting and angling licences. Ministry field offices are used by hunters and anglers as sources of expert information regarding: local hunting and angling regulations, directions, conditions of local terrain or water conditions, clarification of hunting and angling regulations, or for other tips which may enhance their hunting/angling experience.

2.7.   Information Technology Office

Saskatchewan's Information Technology Office provides the technical infrastructure and associated services to support information technologies used by the Ministry of Environment.

3. Licensing Components

3.1. Angling Licence

A Saskatchewan angling licence provides permission to the holder to angle for fish in designated seasons and waters in Saskatchewan. Persons over the age of 16 years require a licence to fish in Saskatchewan. Annual angling licences are available to Saskatchewan residents, Saskatchewan resident seniors, Canadian residents and non-residents. 3 day licences are also available for Saskatchewan residents, Canadian residents, and non-residents. Prices vary for each type of licence.
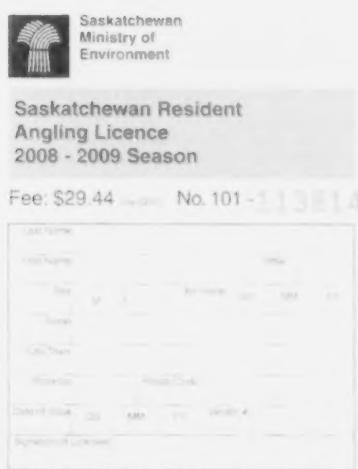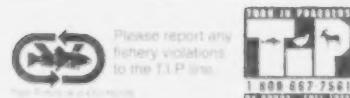
Sample Saskatchewan Angling Licence

3.2. Lac La Ronge Lake Endorsement

A special type of endorsement is required by all anglers (including anglers under the age of 16) to fish on Lac La Ronge lake. The Lac La Ronge Lake endorsement contains information about the angler and a Lac La Ronge Lake Trout Catch Record to be maintained by the angler. The Lac La Ronge endorsement is to be returned to the Ministry once the angler is finished angling on Lac La Ronge for the season. The information is then used by the Fish and Wildlife Branch to monitor angling pressures on Lac La Ronge.

3.3. Wildlife Habitat Certificate

All hunters are required to obtain a Wildlife Habitat Certificate as a precursor to obtaining a hunting licence. In its present form, the Wildlife Habitat Certificate is a paper certificate onto which specific licences may be affixed. There is no distinction between residents, Canadian-residents and non-residents for the Wildlife Habitat Certificate – the same type of Wildlife Habitat Certificate applies to all hunters. Further, a Wildlife Habitat Certificate is an Accountable Document meaning that each certificate is individually serial numbered and must be tracked and accounted for by the Ministry.

Sample Wildlife Habitat Certificate

3.4. Hunting Licence

Hunting licences may be issued by the Ministry for specific big game and upland bird species. Each hunter requires a valid Wildlife Habitat Certificate to be eligible to obtain hunting licence. A variety of licences are available. Generally, licences will be issued based on species and the hunter's residency status and each licence type will have an associated price.

3.5. Big Game Draw Hunting Licence(s)

The Big Game Draw program allocates hunting licences to Saskatchewan residents for specific big game species in specific areas. All Big Game Draw licence allocations are based on a lottery system. A pre-determined number of licence allocations are established by the Ministry prior to conducting the draw. Applications to the Big Game Draw are submitted, evaluated for eligibility, the draw performed, and licences are allocated to the successful applicants. A valid Wildlife Habitat Certificate is required to obtain a Big Game Draw allocated licence.

3.6. Seals/Tags

Seals (also referred to as 'tags') are used in Saskatchewan to identify specific game taken by hunters. Seals are provided to the hunter at the time of licence issue. Seals are 'cancelled' by the hunter and affixed to the animal at time of harvest. Seals/tags are associated with a specific licence. The seals/tags are used as a compliance tool to ensure each harvested animal can be traced to a specific licence.

In general, seals/tags are used for species where annual limits are in effect. Likewise, seals/tags are not used for species where daily limits are in effect.
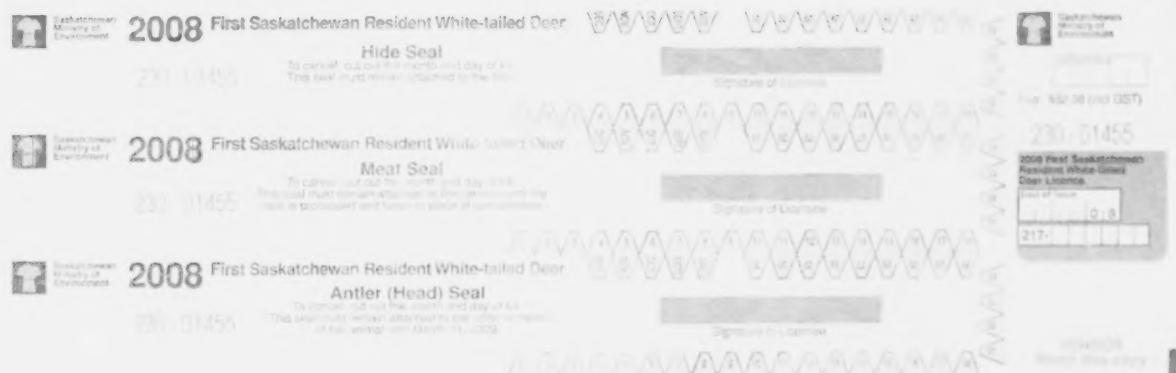
Sample Seal/Tag with hunting licence

3.7. Outfitter/Resource Allocation Licences (RALs)

Outfitter/Resource Allocation licences (RALs) are allocated to big game outfitters who are endorsed by the Ministry of Environment to provide outfitting services for either or all: non-resident moose, non-resident bear or non-resident white-tailed deer. Each outfitter is allowed a specific number of RALs for a specific species each year (Example: an outfitter may be granted 10 non-resident white-tailed deer RALs, and 5 non-resident bear RALs). A non-resident hunter for moose, bear or white-tailed deer, is required to use the services of an outfitter to hunt in Saskatchewan. The hunter must purchase a Wildlife Management Certificate and the appropriate non-resident hunting licence. The hunter's outfitter then attaches a RAL to the hunter's Wildlife Management Certificate to validate the licence to enable the non-resident hunter to hunt in Saskatchewan.

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3.8.   Fur Licences

Fur licences may be obtained by eligible customers in southern Saskatchewan.

A Fur Conservation Area has been established in the northern part of the province and has been divided into areas of administration called Fur Blocks. Each Fur Block has an administrative body of area trappers that determines who may or may not trap within the Fur 3lock's geographic area. Fur licences for use in northern Saskatchewan are allocated to trappers based on each trapper's participation in a Fur Block.

A valid Wildlife Habitat Certificate is required to obtain a fur licence.

3.9.   Hunting and Angling Guides

The Ministry of Environment publishes an annual Hunters' and Trappers' Guide and an annual Anglers' Guide. These guides are a key communication tool between the Ministry and the customer audience. A variety of pertinent, up-to-date hunting, trapping and angling information is disseminated from the Ministry to customers via the guides. The guides are available in paper form from licence vendors and Ministry of Environment offices.   The guides are also available in electronic format, online at the Ministry of Environment website. The paper format is very popular as the guides are referenced often by hunters and anglers throughout the season. These guides, in paper format, are often carried in tackle boxes, boats, hunting cases, trucks, or remote camps where electronic versions of the guides are not accessible in a practical manner.

Cover – 2008 Saskatchewan Angler's Guide
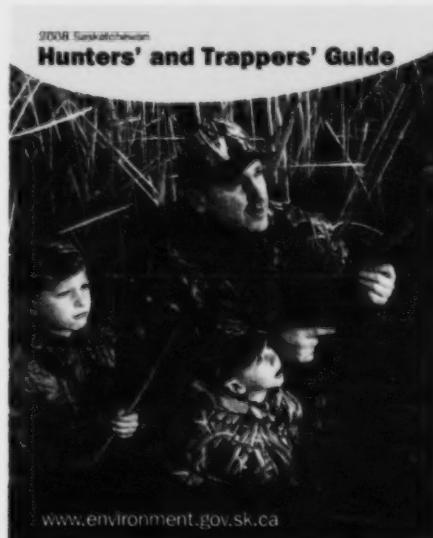
*Cover – 2008 Saskatchewan
Hunters' and Trappers' Guide*

3.10. First Nations Wildlife Harvest Permit

First Nations Wildlife Harvest Permits are available to hunters who harvest animals on First Nations property such as reserves. To transport a harvested animal off First Nations property, a First Nations Wildlife Harvest Permit must be attached to the animal to show that it was legally harvested.
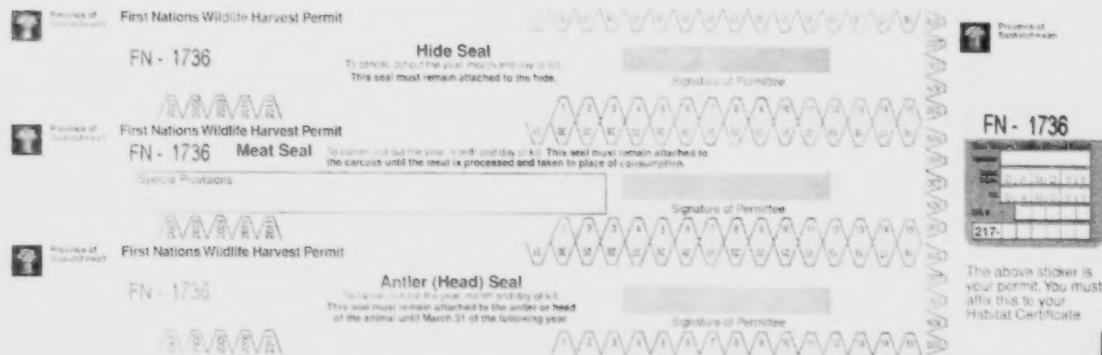
Sample First Nations Wildlife Harvest Permit Seal/Tag

3.11. Migratory Game Bird Permit

Migratory Game Bird Permits are special hunting licences to permit hunters to hunt migratory game birds such as ducks and geese. Permission to hunt migratory game birds falls under the jurisdiction of the Federal government, specifically Environment Canada. The Saskatchewan Ministry of Environment is not responsible to issue Migratory Game Bird Permits. However, each migratory game bird hunter in Saskatchewan is also required to hold a valid Saskatchewan Wildlife Habitat Certificate and a Saskatchewan Game Bird Licence.

Migratory Game Bird Permits are issued through Canada Post offices and are not available from Saskatchewan hunting and angling licence vendors.

In general, Canada Post offices do not issue Wildlife Habitat Certificates or Saskatchewan Game Bird licences and these must be obtained through a Saskatchewan hunting and angling licence vendor.

Sample Migratory Game Bird Permit

3.12. Special Permits

Special permits may be issued by the Ministry of Environment. Permits are not licences, rather permits are special permissions granted for specific reasons to specific individuals.   Generally, each special permit is unique with specific conditions in play.

4. Licensing Parameters

Each licence issued by the Ministry of Environment grants specific permission to an individual. There are some parameters common to most licences.

4.1. Seasons

Each hunting, angling or fur licence is valid during a specified season. Seasons vary by activity (hunting, angling, trapping), geographic region, residency and sometimes species. Each season is set by the Ministry of Environment's Fish and Wildlife Branch.

4.2. Species and Limits

Angling licences are valid for a number of fish species in Saskatchewan. Daily angling limits (the maximum number of fish caught and retained by an angler) are set for each eligible fish species. Angling limits may also be specific to bodies of water.

Daily hunting limits are established for upland game birds and are similar to angling limits in that they are set by species. Annual limits apply for some species of upland game birds based upon the licensee's residency.

Annual limits for big game animals are established. In general, a limit of one animal may be harvested per licence. Seals/tags are used on big game animals.

4.3. Geographic Zones

Some licences identify specific geographic zones for which the licence is valid. Examples are:

- Big Game Draw licences are valid in specific Wildlife Management Zones only
- Lac La Ronge Lake Endorsements are valid on Lac La Ronge lake only
- Outfitter Resource Allocation Licences are valid based upon the Outfitters permitted area of operation.

4.4. Licence Eligibility

Each licence issued contains information to demonstrate that the licensee is eligible to hold the licence.

The licensee's name, address, date of birth (age), and gender are displayed on each licence.

Saskatchewan resident hunting licences further display the licensee's Saskatchewan Health Services Card (SHSC) number to demonstrate their special status as a Saskatchewan Resident.

All licences display the licensee's signature to demonstrate the licensee's declaration to acknowledge that they are eligible to hold the licence.

5. Assessment of the Current Licensing Situation

5.1. Current Business Processes

Drawing Name:	HAL - Current Situation		Location:	Ministry of Environment
Fish & Wildlife	Compliance and Field Services	Customers	Vendors	Finance & Administration

| Author: | Stacy Lloyd | Date: | August 13, 2008 | Revision: | 01 |

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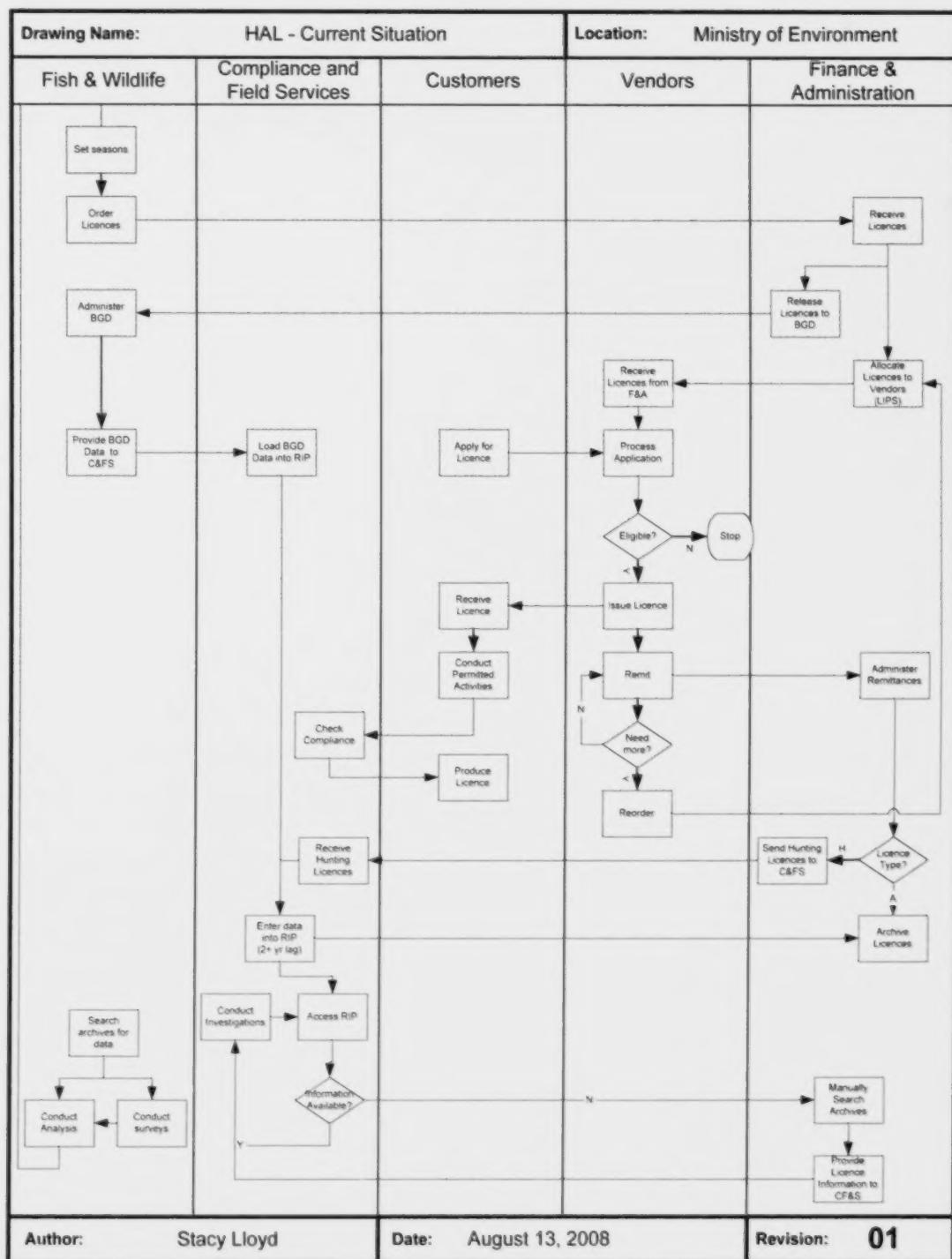
5.1.1. Process Definitions and Descriptions

Pre-Season Preparations

Analysis is performed by the Fish and Wildlife Branch on fish and game species, seasons, limits, zones, licence prices, and anticipated licence issuance volumes. From this analysis, licence type and quantity requirements are determined for the entre year.

Based on the licence type and quantity requirements, pre-printed licences are ordered from a supplier. The pre-printed licences are then shipped from the supplier and received by the Ministry prior to the opening of the hunting and angling seasons. All pre-season licensing preparation processes are conducted manually and do not make use of an automated system.

Licence Allocation

All pre-printed licences display serial numbers (unique licence identifiers). As licences are allocated by the Ministry to licence vendors, licence serial numbers are associated with the appropriate vendor. Licence serial numbers and the associated vendor identifier are input into the Ministry of Environment's Licence Information Processing System (LIPS). Licences are processed and tracked, 'cradle-to-grave', by the Ministry as 'Accountable Forms'.

Licence Issuance

Vendors receive their sets of allocated licences from the Ministry. Customers apply with a vendor to obtain licences. As part of the customer application for a licence, they must declare their eligibility to obtain a licence. Licences are then issued, by licence vendors, to eligible customers. If the specific licence(s) requested by the customer is available from that vendor, the customer receives the licence immediately. In the event that a specific licence is not available from that vendor, the customer may choose to go to another vendor to obtain the licence. Licence applications received from customers by the Ministry via the Internet, telephone or mail may be issued and received by the customer though the mail in 3-4 weeks.

Vendor Remittances

Proceeds from the issuance of hunting and angling licences are remitted by licence vendors to the Ministry of Environment on a regular, scheduled basis. Remittance schedules and processes vary based upon the type of vendor (private, Ministry office, Big Game Draw). Unissued licences are accounted for within a remittance report and returned to the Ministry. Copies of all issued licences are also accounted for within a remittance report and sent to the Ministry. All issued and unissued licences are accounted for and reconciled to the allocations as recorded in LIPS. Financial proceeds from licences are reported and sent to the Ministry. Funds are processed following the Saskatchewan Ministry of Finance's Financial Administration Manual (FAM). Financial information is recorded in the Ministry of Environment's Financial Management Software (FMS) and subsequently uploaded to the Government's enterprise financial management software, MIDAS.

Licence vendors retain a commission amount on each licence issued. Commission amounts vary based upon the type of licence issued.

Big Game Draw

The Big Game Draw is a Ministry program to allocate additional licences for specific species to Saskatchewan residents. Saskatchewan resident customers complete an application form for the Big Game Draw based on species and Wildlife Management zone(s). Saskatchewan resident customer information is collected and input into the Big Game Draw database. Applications are checked for eligibly. Eligible applications are placed in a draw pool for each licence, where applicant draw statuses are maintained from two years previous to the current year draw. Pool status is only updated for applicants who apply in the current year. The Big Game Draw is performed as a lottery where all applicants in a given pool have the same, random, chance to be selected for a licence. There is no guarantee that a licence may be issued to any applicant. The draw is then performed; applicants are successful or not. Successful applicants are issued the specific licence(s).

Conduct Permitted Activities

Licensed hunters, anglers and trappers conducted their respective activities as permitted and licensed by the Ministry of Environment. Licensees are required to possess a valid licence while conducting their respective permitted activities.

Seals/Tags

It is required that certain fish, fur and game species be 'tagged' at the time of harvest. Special seals are produced and provided to hunters as part of the hunting licence. Upon harvest of an animal, the licensee is required to 'cancel' each seal by cutting out the date of the harvest, then attaching each seal to the animal in a prescribed fashion.

Compliance

Hunting and angling activities are monitored for compliance to legislation, rules and regulations. Incidents of non-compliance may result in legal action upon the licensee. At this time, access to current licence information is not available to Conservation Officers who carry out the compliance work for the Ministry of Environment.

Licence Data Archiving

Copies of issued licences are archived, that is, manually organized and packaged into boxes for storage. Copies of issued angling licences are organized by serial number, placed in boxes and stored by the Ministry of Environment in Regina.

Data from issued hunting licences are manually entered into Compliance and Field Service's Resource Intelligence Program (RIP). Data entry efforts are currently backlogged 2-3 years. Once data entry is complete, copies of the issued hunting licences are organized by serial numbers, placed in boxes and stored by the Ministry of Environment in Prince Albert.

Licence data from the Big Game Draw is retained in the Big Game Draw database. A data extract is taken from the Big Game Draw database and loaded into the RIP database to support compliance activities. Copies of Big Game Draw licences are organized by serial number, placed in boxes and stored by the Ministry of Environment in Regina.

Investigations and Enforcement

Investigations and enforcement of suspected violations typically occur some period of time after the respective harvest season has ended. Licence data may be pertinent to an investigation or enforcement activity. At this time, licence information must be obtained from the archived copies of licences to support investigation and enforcement efforts. Manual retrieval of licence copies from manual archives is a laborious activity requiring several hours of effort and several communications exchanges between archive retrieval staff and Conservation Officers. The manual retrieval of licences may add hours or days of manual effort onto each investigation.

Post-Season Research

Licence data may be used to conduct research following hunting and angling seasons. In turn, this research assists the Ministry in their preparations towards next year's hunting and angling seasons, as well as to determine sustainable levels of fish and game, and may impact related legislation, rules and regulations.

5.1.2. Assessment of Current Business Processes

The current business processes related to hunting and angling licensing are primarily manual and time-consuming.

The majority of process inputs are paper-based forms or reports containing a limited amount of information. The outputs from most processes are also paper-based forms or reports. Large amounts of paper forms are produced, handled and manually routed between and amongst stakeholders.

For example, each hunting or angling licence is manually handled up to nine (9) separate times through its life cycle. Each licence is physically transported (routed) up to eight (8) times. Information about each licence may be manually transcribed onto other paper forms or computerized databases up to four (4) times.

Drawing Name:	Licence Lifecycle	Location:	Saskatchewan Ministry of Environment
Author:	Stacy Lloyd	Date:	September 12, 2008	Revision: 01
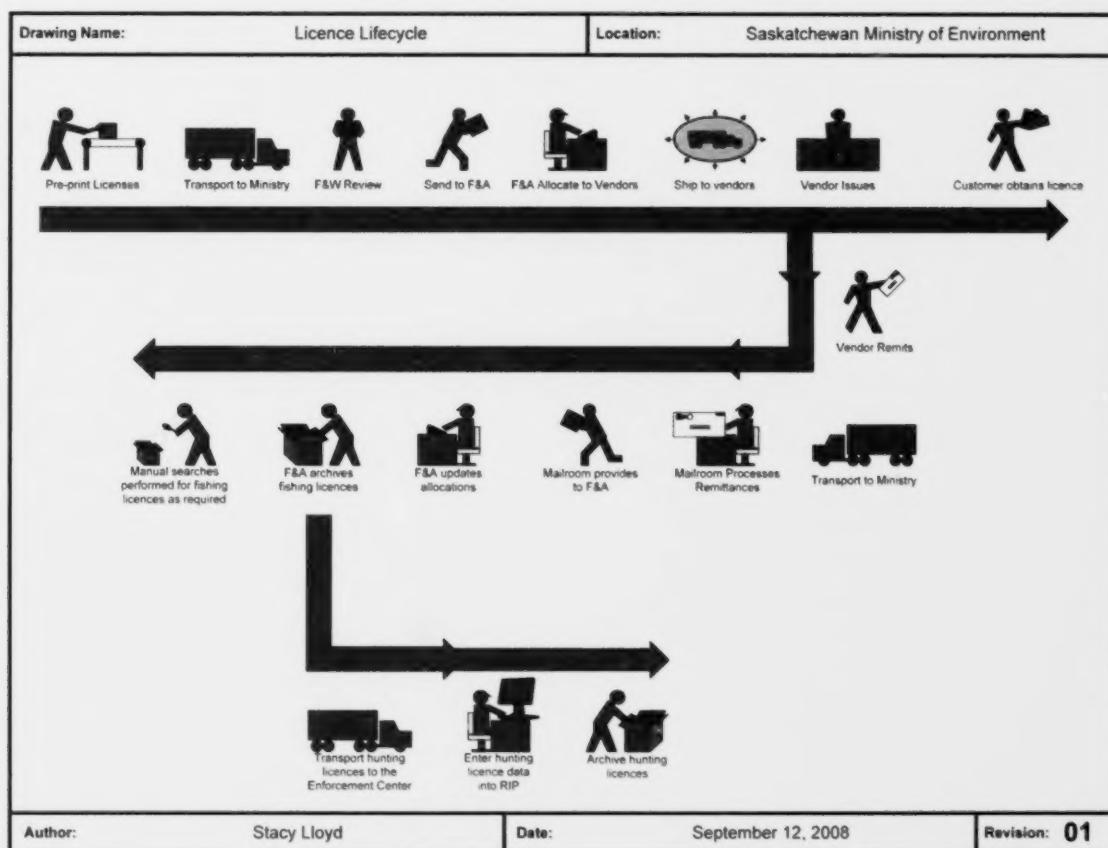
Inefficiencies are introduced due to the manual processing of information. Forms and reports are physically routed which creates time lags in the processes and, at times, impedes Ministry program delivery. Data entry is time consuming and data entry staff levels are insufficient to support the volume of information handled. As a result, information collected by the Ministry is either not available to support Ministry programs (example: angling licence information) or, is captured at such a late date that the lack current information impedes program delivery (example: hunting licence information).

The Ministry of Environment processes, with regards to hunting and angling licences, are tightly focused on the issuance of licences and customer service. In general, the current processes do support licence issuance and provide adequate levels of customer service. Minimal focus however, has been placed upon processes to support financial management requirements, or to leverage licence information for natural resource stewardship, scientific analysis or compliance and enforcement activities.

The current processes do not support current program needs.

The current processes will not support substantial increases in hunting or fishing activities in Saskatchewan.

The current processes will not support future hunting and angling licensing program improvements.

5.2. Current Business Organization

5.2.1. Current Business Organization Definition and Descriptions

Drawing Name:	Organizational Chart for Automated Hunting and Angling Licensing	Location:	Saskatchewan Ministry of Environment

* This diagram depicts only the primary stakeholders in an Automated Hunting and Angling Licensing solution. Other Ministry Divisions and Branches or associated organizations are not shown.

Author:	Stacy Lloyd	Date:	September 08, 2008	Revision: 01

The current business processes for the administration of hunting and angling licences involve five key stakeholder groups:

- Customers
- Licence Vendors
- Ministry of Environment, Finance and Administration Branch
- Ministry of Environment, Compliance and Field Services Branch
- Ministry of Environment, Fish and Wildlife Branch

The Information Technology Office provides network and application support to the program.

The Finance and Property Management Section of the Ministry's Finance and Administration Branch, interacts with vendors to enable licence issuances for customers.

Licence vendors are the Ministry's initial interface with customers. Compliance and Field Services may interact with hunters and anglers in the field.

5.2.2. Current Business Organization Assessment

Ministry of Environment Organizational Assessment

The business organizational structure is streamlined and efficient. There is no perceivable redundancy or inefficiency due to the business organization for the issuance of hunting and angling licences. The Ministry of Environment is a large organization, hunting and angling licensing represents one part of the Ministry's larger ecological management mandate.

There is however, insufficient staffing available within the Ministry to support the manual processes associated with licence issuance. Some relevant business activities are not performed due to the volume of effort required to perform the manual processes. The inability for the Ministry to complete all business activities greatly detracts from the potential value available to the Ministry through licence issuance.

Examples of relevant business activities not performed by the Ministry include:

Activity	Limitation	Unrealized Value
Electronic data capture of angling licence data	Handwritten issued licences must be manually keyed into a database. The volume of licences is large; sufficient data entry staff members are not available to perform manual data entry.	Reduced resource management capabilities. Reduced Compliance and Enforcement capabilities.
Allocation of additional licences to vendors	Licences are pre-printed and require that vendors re-order additional licences from the Ministry. Often vendors feel they will not receive the licences in time or that the process takes too much effort on their part to complete.	Customer frustration Vendor frustration Reduced licence issuance
Investigations into licence fraud	Manual searches of paper licences	Reduced ability to detect fraud

A significant amount of value is untapped and unrealized by the Ministry due to the number of staff members required to perform manual processes.

Vendor Assessment

There are 734 active Saskatchewan hunting and angling licence vendors located in 355 distinct communities in North America. 59 of these vendors are Saskatchewan Ministry of Environment field offices and one (1) is the Big Game Draw.

Location (type)	Number of Vendors	Communities with Vendors
Saskatchewan	688 (includes Ministry of Environment)	329
Alberta	20	13
Manitoba	16	3
United States of America	10	10
Totals	734	355*

* Communities numbers are based upon mailing addresses of vendors

The Ministry maintains a relationship with each licence vendor. Statuses, licence allocations, remittances, remittance statuses are tracked and processed by the Ministry, for each individual vendor. There is a significant amount of administrative overhead for the Ministry to support each licence vendor, which requires part-time effort by two full time equivalent Ministry staff members.

A breakdown of Saskatchewan communities and vendors reveals that many small communities have multiple licence vendors. The following table displays the number of communities (grouped by size) with the associated number of licence vendors for those communities.

Count of Communities	Community Populations*					
Number of Licence Vendors**	0-100	100-1,000	1,000-10,000	10,000-100,000	>100,000	Totals
1	51	144	23			218
2	3#	26	15			44
3		11	19			30
4		4	7	1		12
5		3	4			7
6	1	2	3	2		8
7			2			2
9			1	2		3
11				1		1
12			1			1
13			1			1
16			1			1
17				1		1
20					1	1
34					1	1
Totals	55	190	77	7	2	331

* Population data sourced from the Ministry of Health, 2007 Population records

** Vendor data sourced from the Licence Information Processing System (LIPS) as at July 2008

The shaded area indicates communities where the number of existing vendors exceeds the Ministry's guidelines.

The majority of existing licence vendors are located in smaller communities in Saskatchewan. This is a result of the Ministry's desire to ensure adequate customer access to licences throughout the entire province. It is however noteworthy, that many small communities do have multiple vendors.

Convenience sampling from the population of small community vendors was performed. From the sample group two key observations were made:

1) Examples exist where small community vendors are located in communities where no other services are available. Hunting and angling licence customers must travel elsewhere for hunting and/or angling related services such as gasoline, food, accommodations, or sporting goods. In such locations, customer access to licence vendors is excellent and exceeds customer access to all other services in those communities.

2) Examples exist where small community vendors are located within the service areas of larger communities. While an exact analysis cannot be performed due to the poor data available, these examples provide some indication that the number of small communities with multiple licence vendors in their service area is understated in the chart above.

An analysis of licence issuance data indicates that approximately 20 percent of the vendors issue 80 percent of the licences.   That is to say, the majority of licences are issued to customers by only a few vendors. In general, there are strong signs of licence vendor redundancy in Saskatchewan. Vendor redundancy increases the amount of vendor support effort required and contributes to the workload experienced by the Ministry.

Geographically, communities with licence vendors are evenly distributed in the southern part of the province. In the northern areas, communities with licence vendors are sparsely distributed. These observations are demonstrated in the following map. It is important to note, that due to poor data availability, the map represents the business mailing address of vendors rather than the business operating location. It is assumed that the business mailing address introduces a skew on the data which in turn serves to overstate the number of vendors in some locations and to understate the number of vendors in other locations.
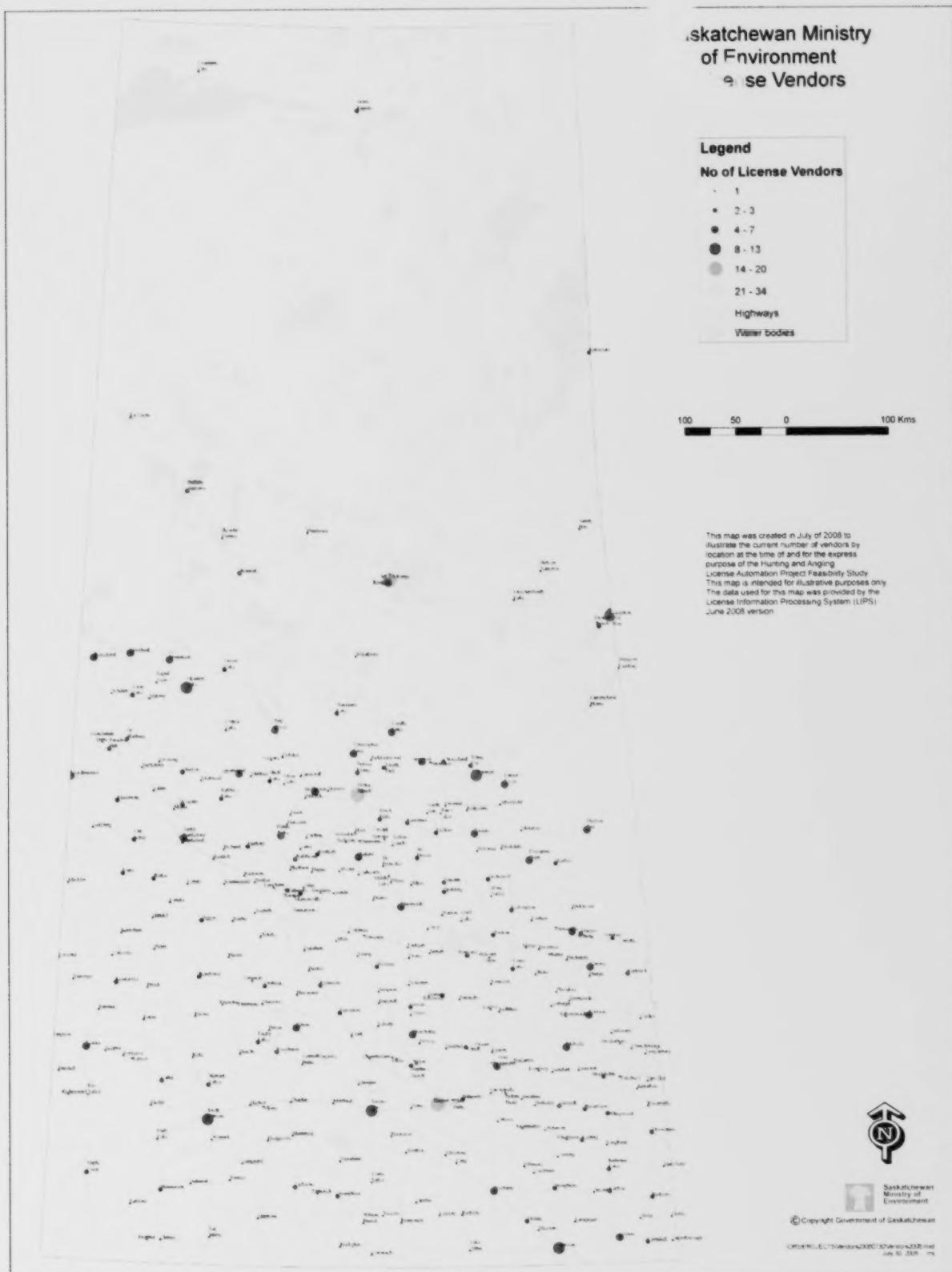
Saskatchewan Ministry
of Environment
License Vendors

Legend
No of License Vendors
- 1
- 2 - 3
- 4 - 7
- 8 - 13
- 14 - 20
- 21 - 34
- Highways
- Water bodies

100   50   0   100 Kms

This map was created in July of 2008 to
illustrate the current number of vendors by
location at the time of and for the express
purpose of the Hunting and Angling
License Automation Project Feasibility Study.
This map is intended for illustrative purposes only.
The data used for this map was provided by the
License Information Processing System (LIPS)
June 2008 version.

Saskatchewan
Ministry of
Environment

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The current Ministry expectation is that in rural areas, there should exist one vendor within a 50 km radius to provide adequate access to licences for the public. Analysis of the current vendor distribution shows that the southern portion of the province is well covered within a 25 km radius, approximately 4 times the coverage expected to provide adequate access for customers to licences. Due to poor data availability, the maps below represent the business mailing addresses of vendors rather than the business operating location. It is assumed that the business mailing address introduces a skew on the data which in turn serves to overstate the vendor coverage in some locations and to understate the vendor coverage in other locations.
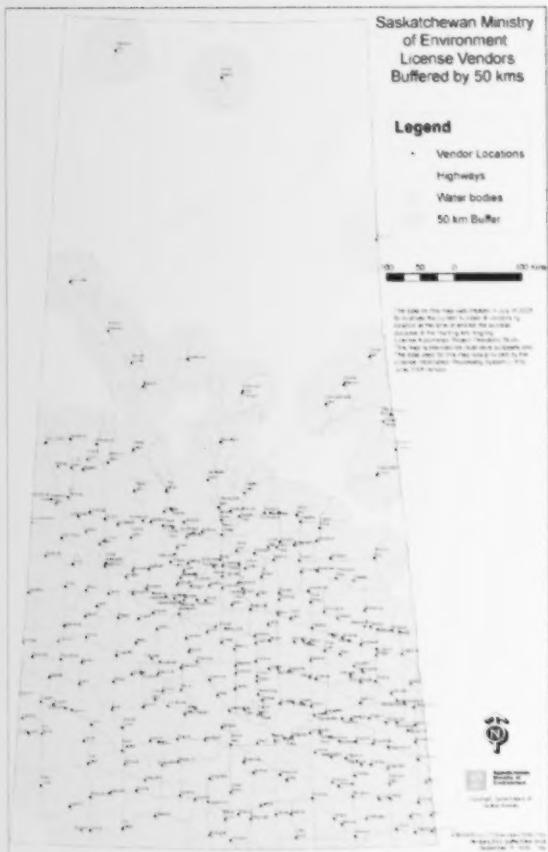
Vendor distribution -50 km radius
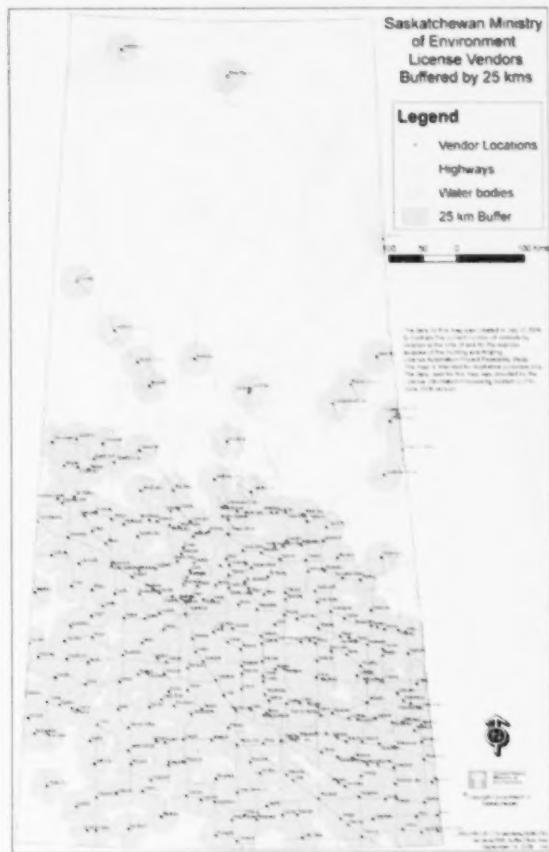
Vendor distribution - 25 km radius

ESTI

5.3.   Current Business Locations

Ministry of Environment, Head Office

The Ministry of Environment's primary offices are located in Regina. All administrative functions related to hunting and angling licences are performed from the Regina location.

Ministry of Environment, Field Offices

There are 59 Ministry of Environment field offices distributed throughout the province. The field offices are service centers for Ministry customers. As part of this capacity, field offices also act as licence vendors.

In general, local compliance and enforcement work is conducted from field offices.

In certain field office locations, Fish and Wildlife staff members are employed to support local resource management programs.

Provincial Enforcement Centre

The Provincial Enforcement Center is located in Prince Albert. The Provincial Enforcement Center is home to the Enforcement Center Dispatch; the communications and command centre for the Ministry's Enforcement and Compliance programs. The Provincial Enforcement Center is also home to the Specialized Enforcement Unit and the Special Investigations Unit. Licence data is integral information, required to support the work performed through the Provincial Enforcement Centre.

At present, all licence information requests by field staff are processed by the Provincial Enforcement Center Dispatch staff.

Copies of issued hunting licences are archived at the Provincial Enforcement Center, and as time permits, are keyed into the Resource Intelligence Program (RIP) for access by authorized Compliance and Enforcement personnel.

Vendor Locations

Hunting and angling licence vendors are distributed throughout the entire province. Licence vendors may be government offices or private sector businesses such as: major department stores, sporting goods stores, service stations, isolated hunting/fishing camps. Some vendors are located in very remote areas where communications may only be enabled through the use of satellite technologies.

ESTI

Field Operations

Ministry staff members, such as Conservation Officers and scientists, conduct hunting and angling related activities in the field. Licence information is, when required, requested by field staff through the Enforcement Center Dispatch over radio or telephone communications.

5.4. Current Business Data

Drawing Name:	Hunting and Angling Licence Data Flow Current Situation	Location:	Ministry of Environment

Author:	Stacy Lloyd	Date:	August 06, 2008	Revision: 01
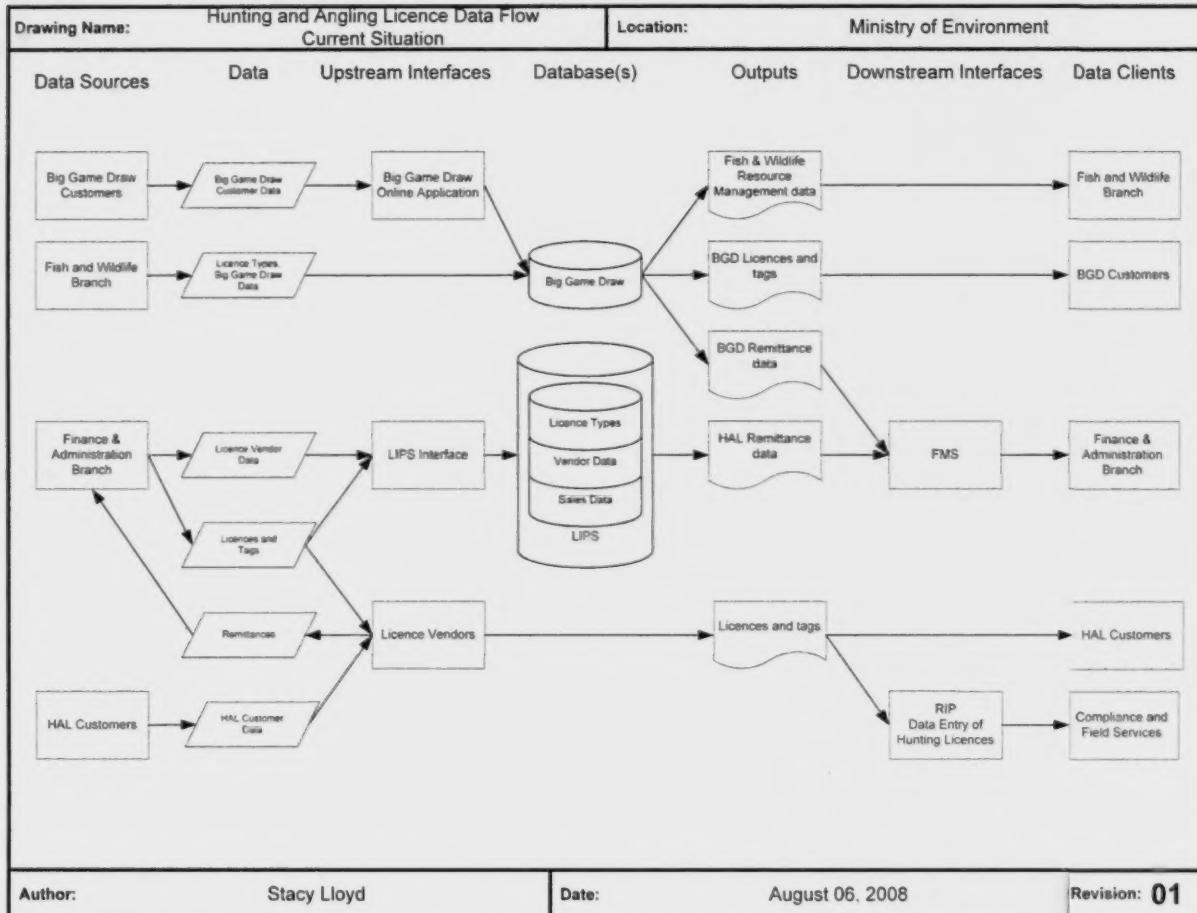
Licence Pre-printing data (Licence types, seals, quantity)

The quantity, types, prices and designs of licences and seals/tags to be pre-printed are determined by the Fish and Wildlife branch prior to the opening of a season. These details are extrapolated based upon previous year licence allocations and issuance statistics, biological research and business needs. The detailed information is provided to a commercial printer for the pre-printing of the licences and seals

Licence Allocation data

All licence allocation to vendors is tracked within the LIPS system. Licences are allocated to vendors based on previous year licence issuances for that vendor. New licence vendors are allocated a minimum set of licences.

In the event that a vendor runs out of licences during a season, the vendor may call the Ministry to request additional licences. The Ministry may allocate and ship additional licences to the vendor.

Vendor data

Detailed information about licence vendors is collected and maintained by the Ministry. This information is used to track vendor statuses, licence allocations to vendors and remittances from vendors. Vendor data is maintained within the LIPS database. Vendor data components are:

- Vendor ID
- Vendor Type
- Region (location of vendor based upon the Ministry's geographic and administrative classification)
- Vendor Name (Business Name)
- Vendor Owner/Operator Contact Name
- Seasonal contact information
- Off-season contact information
- Licence Allocations (types, amounts, valuations)
- Financial Balances (Last remittance, balance dates, account codes)
- Financial Transactions (dates, amounts, over/under remittances)
- Vendor Status (active, suspended, reinstated, deleted, collection)

Outfitter data

Information about outfitters is collected and managed by the Ministry. This information is used to track outfitters, outfitting allocation areas (territories) and outfitter permissions. The Ministry maintains this data in the Ministry's Outfitter Database. With regard to licensing, it is of particular interest for the Ministry to know which outfitters are also licence vendors, and, what the allocation quota of Outfitter/Resource Allocation Licences is for each outfitter. Outfitter details relevant to licensing are:

- The unique Outfitter ID
- A Vendor ID (if applicable)
- Outfitter name
- Contact information
- Outfitter locations
- Outfitter Resource Allocation Licences quotas (types, quantities)

Licensee data

Licensee information is collected at the point of licence issue to validate the licensee's eligibility to obtain the licence and to support Ministry programs. Currently, archived licensee information is accessed most often for compliance purposes. Licensee information may also be used to conduct surveys, demographic research, or for enforcement and investigations purposes.

Licences record:
- Licensee name
- Address
- Date of Birth
- Gender
- Saskatchewan Health Services Card number
- Date of issue
- Vendor identification

Licences must be signed by the licensee to be valid.

In general terms, licensee data serves to:
- Identify the licensee
- Demonstrate licensee's residency status
- Demonstrate licensee's eligibility to obtain the licence

The licensee's signature serves as a legal declaration that the information provided is accurate.

Licensee data from angling licences is not currently stored electronically by the Ministry.

Licensee data from hunting and fur licences is stored electronically within the Resource Intelligence Program, however, this data is manually keyed into the database and the data entry work is currently backlogged 2-3 years.

Big Game Draw data

The Big Game Draw is a special case of licence allocation. In addition to the licensee data for regular licences, additional information is collected and tracked over time.

The Fish and Wildlife Branch designate the eligible Wildlife Management zones, species, quotas and seasons for the Big Game Draw. This information is input into the Big Game Draw software application and used to conduct the draw.

The Big Game Draw requires that customer applications be completed and submitted to the Ministry. Application information includes:

- Species
- Wildlife Management Zone(s) (up to six zone choices per application)
- Licensee data for each applicant on the application (up to four applicants may apply on with a single application)
- Payment type
- Applicant signature (paper-based applications only)
- Applicant telephone number
- Applicant email address (online applications only)

This data is received by the Ministry and input in the Big Game Draw software application. Based on previous year allocations and draw results, and a set of prescribed business rules, a random lottery draw is performed to allocate licences to applicants. The current year draw results are retained for the following year draw.

All Big Game Draw applicants are charged an application fee. Only successful applicants in the draw are issued licences. Payment is collected only for issued licences. Licence fees are collected by the Fish and Wildlife Branch and remitted to Finance and Administration Branch. As such, the Big Game Draw processes are very similar to those for any other licence vendor.

Licence Vendor Remittance data

Licence vendors are required to collect fees from the issuance of licences. Licence vendors retain a commission from each issuance, based on a commission grid. Each month, licence vendors are required to remit the collected fees to the Ministry, along with a remittance report to support the fee amount.

For each type of license the following information is provided by license vendors to the Ministry's Finance and Administration branch within each remittance:

- Licence type
- Licence serial numbers for issued licences
- Licence value for issued licences less vendor commission
- Quantity of issued licences
- Licence serial numbers for unissued licences
- Licence value for unissued licences
- Quantity of unissued licences

For each vendor remittance, the following information is reported by the licence vendor to the Ministry:

- Remittance date
- Total value of the remittance (total value of issued licences less total commission)
- Cheque or money order number (if applicable)
- Visa/Master Card number (if applicable)
- Visa/Master Card expiration date (if applicable)
- Vendor ID (vendor number)
- Name of the person who prepared and submitted the remittance
- Address of the business who prepared and submitted the remittance

5.5.   Current Business Applications

A number of database applications are in place at the Ministry of Environment to support the hunting and angling licensing business processes:

- Licence Information Processing System (LIPS)
- Big Game Draw database
- Resource Intelligence Program (RIP)
- Financial Management System (FMS)
- Outfitter database
- Lac La Ronge Endorsement database

In addition, the Ministry utilizes the government's enterprise financial system, MIDAS, for financial processing.

All systems operate independently from the others. In some cases, data is redundantly entered into multiple systems. In some cases, data may be extracted from one database and used as input into another. This creates multiple datasets any of which may be changed by different people in one place, but not another and results in different records of what is supposed to be the same data. At times, the Ministry has difficulty determining which set of data is correct, if any.

Licence Information Processing System (LIPS)

LIPS is used to track vendor information and hunting, angling, and fur licence allocation information. First Nations Wildlife Harvest Permits, Lac La Ronge Angling Endorsements, Outfitter/Resource Allocation Licences and licences issued through the Big Game Draw program are not managed by LIPS.

Upon receipt of pre-printed licences from the Ministry's official printer, licence numbers are manually entered (in batches) into LIPS. Licences are allocated in batches to vendors. Allocations are recorded in LIPS. Vendors then remit financial information, funds and copies of issued and unissued licences to the Ministry. LIPS is updated with remittance information on issued licences, unissued licences and associated funds received. Licence issuance information from LIPS is used by Fish and Wildlife Branch for follow-on year pre-printing licence orders and as an indictor of the hunting and angling pressures within the province.

LIPS was developed in the early 1990's in Clipper, a DOS-based database application programming language. Clipper was a popular business software development platform during the late 1980's and early 1990's, just prior to the mainstream introduction of relational database management systems (such as Microsoft Access, SQL*Server, Oracle). Currently, LIPS runs on Windows-based personal computers in an emulated DOS environment session.

The original LIPS programmer has solely maintained this system since its creation. The original LIPS programmer recently retired from the Information Technology Office, as such, his long term business understanding and his technical expertise with Clipper has been lost to the Ministry.

Technical documentation for this software application has not been able to be discovered as part of this study. Technical documentation is useful to programmers and enables efficient

software maintenance, enhancements and support over time. The inability to locate technical documentation for LIPS should be a concern to the Ministry, particularly at a point in time where there is a change in support programmer staff.

User documentation on the system exists, has been maintained over time by the Ministry and is comprehensive.

There are twelve (12) primary users of the LIPS application. All primary users are Finance and Administration Branch staff. The Clipper development software was not a true multi-user platform and, as such, the team of LIPS users must co-ordinate and schedule their use of the system. For example, at times, the licence vendor relations staff may not have access to LIPS at a time when a vendor may call for support or information. The vendor must then wait for a return call from the Ministry once LIPS is available to the licence vendor relations staff.

Big Game Draw database

The Big Game Draw database is used to conduct the lottery for allocation of Big Game Draw licences to hunters.

Big Game Draw customer application forms are received by the Fish and Wildlife branch (online and manual forms) and input into the Big Game Draw database. Data from current year applications and previous year's draw is applied to a formula to place all applicants into 'pools' based upon their draw history. A random number generator is used to select successful applicants. Successful applicants are then issued licences through the Fish and Wildlife Branch. Draw results are retained for use in the following year's draw.

The Big Game Draw database software was developed in the mid-1990's using Clipper, a DOS-based database application programming language. Clipper was a popular business application development platform during the late 1980's and early 1990's, just prior to the mainstream introduction of relational database management systems (such as Microsoft Access, SQL*Server, Oracle). Currently, the Big Game Draw database runs on Windows-based personal computers in an emulated DOS environment session.

The original Big Game Draw database programmer has solely maintained the system since its creation. The original Big Game Draw programmer recently retired from the Information Technology Office, as such, his long term business understanding and technical expertise with Clipper has been lost to the Ministry.

Technical documentation for this software application has not been able to be discovered as part of this study. Technical documentation is useful to programmers and enables efficient software maintenance, enhancements and support over time. The inability to locate technical documentation for the Big Game Draw database should be a concern to the Ministry, particularly at a point in time where there is a change in support programmer staff.

User documentation on the system exists, has been maintained by the Ministry and is comprehensive.

There is one (1) primary user of the Big Game Draw application.

Resource Intelligence Program (RIP)

RIP is a compliance database application developed in Microsoft Access. The data in RIP is highly restricted and, as such, only available to specified law enforcement personnel. RIP operates only at the Provincial Enforcement Center Dispatch. Conservation Officers may request RIP information from the Dispatch operators.

An add-on module to RIP was developed several years ago to house hunting licensee data. Issued copies of hunting licences are sent to the Enforcement Center where Dispatch operators key the data into the licensing module of RIP. Keying is performed on a "best effort" basis during slow periods in the Dispatch area.

The original RIP database programmer has solely maintained the system since its creation. The original RIP programmer recently retired from the Information Technology Office and, as such, his long term business understanding and technical expertise with RIP has been lost to the Ministry.

Recently, a complete business analysis of the RIP system was performed by the Ministry. Specifications and requirements for a replacement system have been developed. At this time, implementation of a replacement RIP system is pending funding approval from the Ministry's Information Management Governance Council (IMGC).

Technical documentation for the existing RIP application was not able to be discovered as part of this study, or as part of the business analysis project. Technical documentation is useful to programmers and enables efficient software maintenance, enhancements and support over time. The inability to locate technical documentation for RIP should be a concern to the Ministry, particularly at a point in time where there is a change in support programmer staff.

User documentation on the system exists, has been maintained by the Ministry and is comprehensive.

There are three (3) workstations from which the RIP system may run. All workstations are physically located and secured within the Enforcement Center in Prince Albert.

Financial Management System (FMS)

In the mid 1990's the Ministry of Finance's Revenue Expenditures System (RES) was nearing the end of its lifecycle. Following the Ministry of Highways initiative with an implementation of a financial system, the Ministry of Environment implemented Oracle Financials and named their solution the Financial Management System (FMS).

Since the introduction of the government's enterprise financial system (MIDAS), financial management functions have been migrated from FMS to MIDAS. Once all components of MIDAS are fully implemented, FMS is scheduled to be retired.

FMS currently operates on Oracle RDBMS version 8.1.7 and Oracle Financials version 10.7.

Outfitter database

The Outfitter database is a Microsoft Access database used to track licensed outfitters which operate within the Province. The Outfitter database is managed by the Fish and Wildlife Branch. The Outfitter database does not share or exchange data with any other Ministry databases.

Lac La Ronge Lake Endorsement database

The Lac La Ronge Lake Endorsement database is a Microsoft Access database used to track the issuance of Lac La Ronge Lake Endorsements, which are only issued from licence vendors located in Lac La Ronge and area. The Lac La Ronge database is managed by the Fish and Wildlife Branch. The Lac La Ronge database does not share or exchange data with any other Ministry databases.

MIDAS

MIDAS is the government's enterprise financial management software. MIDAS is administered by the Ministry of Finance. Ultimately, as part of the larger financial functions of the Ministry of Environment, the licensing financial information is provided to the Ministry of Finance through automated data exchanges between FMS and MIDAS.

5.6. Current Business Technologies

In-person Licence Issuance

In-person licence issuance is performed by licence vendors using paper licences (in duplicate) and pens.

Online Licence Applications

Customers may apply for hunting and angling licences online through the Ministry's web-site. Online licence applications are accepted by the web-site then sent by email to the Regina field office. The Regina field office staff members review the customer licence application. The Regina field office staff members prepare and issue paper licences (in duplicate) with pens, following the same process as the in-person issuance. The prepared licences are then sent by regular mail to the licensee.

Paper-based Big Game Draw application

Paper-based Big Game Draw application forms are pre-printed forms. The paper-based Big Game Draw application forms may be manually obtained and completed by customers. The paper-based Big Game Draw application forms may then be sent by regular mail to the Ministry where the Big Game Draw application information is manually data entered into the Big Game Draw database.

Online Big Game Draw application

Customers may apply for entry into the Big Game Draw online through the Ministry's web-site. Online Big Game Draw applications are accepted by the web-site. The Big Game Draw application information is then electronically extracted from the web-site and electronically loaded into the Big Game Draw database.

Government of Saskatchewan (GOS) Network

The Ministry of Environment has approximately 80 offices throughout the province. The Government of Saskatchewan maintains a wide-area network which provides computer network services to all Ministry of Environment offices. High speed network connections are available at most offices. A recent Ministry report (*Field Officer Automated Data Collection Feasibility Study*, from January 10, 2008) indicates that 15 of the Ministry's offices reported that network services limit their ability to conduct Ministry business due to insufficient communications speeds or frequent loss of service.

Radio Communications

Radios are used in the field to enable Conservation Officers to communicate with the Enforcement Center Dispatch. The dispatch personnel have access to computer systems and other information and may radio this information back to officers in the field.

Telephone Communications

The Ministry of Environment maintains an extensive telephone communications infrastructure.

Telephones are used by Ministry staff members to communicate with:

- Ministry staff members in other locations,
- vendors,
- customers,
- other automated hunting and angling licensing solution stakeholders

Cellular telephones may be used by Ministry staff to communicate with:

- staff in other locations,
- vendors,
- customers,
- other automated hunting and angling licensing solution stakeholders,

Satellite Communications

The Ministry maintains a set of satellite dishes, transmitters, receivers and services to provide network access from temporary work or fire camps. This satellite network connectivity is supported by the Fire Management and Forest Protection Branch and is not expected to be impacted or used by an automated hunting and angling licensing solution.

6.   Current Licensing Challenges

There are a number of challenges associated with delivery of hunting and angling licence services which impede the Ministry's ability to improve program delivery.

6.1.   Current Business Process Challenges

Manual Processing

All parts of the current business processes rely heavily upon manual processing. Pre-printed stock orders of licences and seals/tags, receiving licences from the printer, licence allocation to vendors, shipping licences to vendors, licence issuance, vendor remittance preparations, Ministry remittance processing, remittance reconciliation, vendor re-orders, licence archival and retrieval and licensee information analysis must all be performed as manual efforts. In general, the amount of manual processing is intensive of staff member effort and time. It takes an extensive amount of time to complete the manual business cycles.

The current business processes do not include automated electronic data capture or collection. All data is collected manually on paper forms. Manual data entry is required to extract any information in electronic format for potential reuse and analysis. Manual data entry is extremely labour intensive, prone to error and not timely.

Permission to Hunt, Fish and Trap

Hunters, anglers and trappers must have the ability to demonstrate that they are permitted (licensed) to hunt and/or fish. Further, hunters and anglers must declare acceptance of the conditions and responsibilities associated with hunting and angling.

Currently, signed, paper-based licences are to be carried by hunters and anglers to demonstrate their granted permissions.

Customer Access to Licences

Possession of a valid licence is mandatory to hunt, angle or trap in Saskatchewan. Customers require sufficient access to venues where they may obtain hunting and angling licences.

Licence Allocation

Allocation of licences to vendors is performed prior to each hunting or angling season. Allocations are based upon the previous year's licence issues. From year-to-year, specific vendors may issue more or less licences of any specific licence type. Often, vendors run out of a certain type of licence and need to order additional licences of that type from the Ministry. The re-ordering process takes time and effort by the vendor. As a result, re-ordering is not always performed and vendors are simply unable to issue certain types of licences.

Licence Inventory and Distribution Management

Licences and seals/tags are government property, produced for resale. Each licence and seal/tag has an associated "book value". Licences and seals/tags must conform to the Ministry's and government's Financial Administration policy, and are therefore treated as "inventory". Inventory levels for licences; both issued and unissued, must be accurately managed and tracked. All licences and seals/tags must be accounted for at all times.

- Licences are received from the commercial printer by the Ministry
- Licences are stored in a secured area in the Ministry
- Licences are allocated and sent to vendors
- Licences are issued to customers
- Vendors report, as part of the remittance process cycle, on issued and unissued licences
- Returned, unissued licences are managed as "accountable items" according to Financial Administration Manual (FAM) policy
- At the end of the hunting or angling season, unissued licences are destroyed as per FAM policy

Proof of Eligibility

Hunting and angling regulations are based upon residency status. Regulations for Saskatchewan residents are different than regulations for Canadian residents and are different again for non-residents. Different types of licences are issued based on residency status. These different licences are also priced accordingly. It is currently not feasible to validate each licensee's residency status. Hunters and anglers must declare their residency upon purchase of a licence. Residency status checks may be performed after licences are issued as a compliance and enforcement exercise.

Hunters are required to have obtained a Firearm Safety Certification or to have previously held a hunting licence. It is currently not feasible to validate each hunter's Firearm Safety Certification or previous licence issuance. Firearm Safety Certification and previous licence checks may be performed after licences are issued as a compliance and enforcement exercise.

Vendor Incentives

Vendors receive commissions for each licence issued. Commissions range from $0.50 (50 cents) to $2.00 per licence, based upon the value of the specific licence. The commissions help compensate the vendors for their time to receive licences, issue licences and remit funds, unissued licences and copies of issued licences back to the Ministry. This financial compensation is not high and does not serve as a direct incentive for licence vendors.

For many vendors, issuing hunting and angling licences serves as a 'loss leader'. In some instances, particularly in rural or remote locations, vendors issue licences as a service to their customers. In general, businesses are motivated to issue licences; not from direct financial impact of the licences themselves, but rather, from much more significant financial impact derived from being a vendor. The service of issuing hunting and angling licences serves to draw customers into an establishment and often results in customers purchasing non-licence goods and services.

It is the Ministry's role to demonstrate sufficient value to private vendors to continue to issue licences. Licence Vendors are more apt to accurately and correctly issue licences, follow remittance processes and provide service to Ministry customers where adequate incentives are in place.

Remittance Process

For vendors, the remittance process can be challenging. Records, separate from regular business transactions, must be maintained about hunting and angling licences issued. These separate records must track the type of licence, the licence serial numbers, quantities issued (and unissued), licence values (less commissions), and the total value. These records are maintained on paper forms and all calculations of totals are performed manually by the vendor. The calculation of totals is prone to error. The calculation of totals is further complicated in that licence values are uneven numbers and it can be difficult to estimate totals as a cross-check.

> **Example**:
> A Saskatchewan resident Game Bird licence is priced at $10.90. Nine such licences are valued at $98.10. A miscalculation of $91.80 or $98.90 is possible, while the amounts look reasonable. A licence priced at $10.00 or even at $11.00 is easier to calculate and less prone to error.

This same challenge applies for the Ministry's Finance and Administration staff members as they reconcile the remittances.

Financial Processing

A particular financial processing challenge for the Ministry's Finance and Administration branch is that revenues derived from licences must first feed through the Ministry's Financial Management System (FMS) Accounts Receivable and General Ledger modules. Financial data is then extracted from FMS and imported into MIDAS. Both the FMS Accounts Receivable and General Ledger modules have been modified and customized to an extent where changes to the modules are technically difficult and expensive to perform.

FMS runs on Oracle version 8.1.7 and Oracle Financials version 10.7. Both these software platforms versions are old and are no longer supported by Oracle Corporation. This places the Ministry at risk:

- Should a bug be found in the software, Oracle Corporation will not provide a fix for it
- Security software patches are no longer produced by Oracle Corporation for these products
- The software may become incompatible with new versions of operating systems
- The software may become incompatible with new hardware

Harvested Animal Identification

It is a compliance requirement to ensure that each big game animal is harvested by a licensed hunter. Seals/tags are used to associate a specific harvested animal to a specific hunting licence. Serial numbers on seals/tags match exactly, serial numbers on a licence. At present, it is a challenge to identify a specific hunter with information provided on a properly tagged animal due to the complexity involved to physically locate the specific hunting licence from archives.

Compliance and Enforcement

Compliance and enforcement officers rely upon timely information to conduct investigations and ensure compliance with hunting and angling regulations. Officers work to collect information from a variety of sources: field observations, Turn-In-Poachers (TIP) calls, discussions with the public, other law enforcement agencies, and computer databases. Hunting and angling licence data is one more source of information which Compliance and Enforcement officers may use to support their work. At present, only through manual efforts, may specific historic licence information be available to officers in small volumes. Current licence information is not available to officers. Access to licence data for analysis is not possible. The ability to cross-reference licence data to other data sources is also limited.

Natural Resource Management

Fish, Wildlife and natural resource management is an ever-changing and evolving discipline. During a hunting or angling season, new circumstances may arise which require changes to natural resource management strategies. Events such as: winter-kill in lakes, outbreaks of disease, environmental spills, floods, or fire may impact fish, wildlife and other natural, renewable resources. The Ministry may choose to use a number of strategies to respond to these events, such as:

- Reduce or increase harvest limits
- Restrict access to an area or zone for a period of time
- Alter the length of a hunting or angling season
- Stop the issuance of specific licences

The Ministry's ability to react to outside influences, in a timely fashion is an ongoing challenge.

The Ministry's ability to communicate changes to a hunting or angling audience in such an event is an ongoing challenge.

Proactively, licence issuance information provides insight into hunting and angling pressures in the Province. Further, feedback from hunters and anglers through targeted surveys is a useful technique to supplement and compliment biological datasets for resource analysis. The ability to survey specific hunters or anglers in a timely fashion following the season, improves the quality of survey data.

Fraud

There are a number of reasons why a person may wish to fraudulently obtain hunting or fishing licences. Examples include:

- Persons wish to obtain a less expensive licence
- Canadian residents and non-residents wish to hunt in longer seasons
- Canadian residents and non-residents wish to hunt for species only available to Saskatchewan residents
- Persons wish to harvest excessive limits of game
- Persons are restricted from hunting or angling
- Persons do not hold valid Hunter Safety Certification, Trappers Course certification or previous year's licences.

There are currently a number of ways a person may fraudulently obtain hunting or fishing licences. Examples include:

- Canadian residents and non-residents may declare that they are a Saskatchewan resident
- A person may declare that they hold a valid Hunter Safety Certification, Trappers Course certification or have held licences in previous years.
- A person may purchase multiple licences
- A person may request that Issue Dates on licences be back-dated (in the event the person has been issued a 'Request to Produce' by a Compliance Officer for hunting or angling without a licence)
- A person may declare that they have lost a licence and purchase a replacement licence (replacement licences are much cheaper than the original licence)

Ministry staff members suspect that other licence related fraudulent activities also occur. Examples include:

- Re-use of seals/tags from previous years (to transport illegal taxidermy)
- Use of another person's licence
- Counterfeit licences

Licences, and the licence issuance processes must serve to prevent and/or detect fraudulent activity.

Privacy

Personal and private information must be disclosed to the Ministry of Environment for a licence to be issued to a customer. Licensee names, addresses, date of birth and gender are required information for the issuance of a licence.

Section 31(4) of *The Wildlife Regulations, 1981* specifies that "every Saskatchewan resident who applies for a game or fur licence or a Saskatchewan Wildlife Habitat Licence shall provide his registration and beneficiary numbers from a valid Saskatchewan Health Services Card issued for the purposes of *The Saskatchewan Hospitalization Act* or *The Saskatchewan Medical Care Insurance Act*.

The Saskatchewan Health Services Card number serves to verify applicant's residency status and, at present, the Ministry of Environment is required to collect this data as mandated by *The Wildlife Regulations*. The Ministry of Environment currently is researching alternative residency verification methods. The use of the Saskatchewan Health Services Card number towards hunting and fur licensing has been reviewed by the Saskatchewan Information and Privacy Commissioner and the Ministry of Health. At present, the Saskatchewan Health Services Card number is the best available source of information to verify applicant residency and is expected to continue to be used in this fashion until such time that changes are made to legislation or regulations mandating the use of alternate residency verification.

Once personal information is received from a licence applicant by the Ministry of Environment, the Ministry is required by law to ensure that the applicant's personal and private information is secured, safe and private.

Vendor Support

From time-to-time, vendors require support from the Ministry. Examples of vendor support requests include:

- Ordering additional licences,
- Assistance to prepare and submit a remittance
- Questions regarding issuance and remittance procedures and processes

Vendor support is provided by the Ministry's Finance and Administration Branch via mail, email or telephone.

External Stakeholders

A number of external stakeholders and partners exist. These include:

- Customers (hunters, anglers, trappers)
- the Saskatchewan Wildlife Federation,
- the Saskatchewan Association for Firearm Education (SAFE),
- the Ministry of Finance
- the Ministry of Health

External (non-Ministry of Environment) stakeholders in hunting and angling licensing may:

- provide information or services to the Ministry of Environment,
- require information or services from the Ministry of Environment, or
- partner with the Ministry of Environment to obtain information or services from other organizations
- partner with the Ministry of Environment to provide information or services to other organizations.

It is an ongoing challenge for the Ministry of Environment to adequately share data and information with external stakeholders.

6.2.   Current Business Organization Challenges

General

The Ministry of Environment operates within a structured organizational model. Functional areas are well defined and logically organized to support head office and operations province-wide.   In general, there are few Ministerial organizational challenges apparent with respect to the administration of hunting and angling licence issuance.

The Big Game Draw

The Big Game Draw is a unique program within the Ministry of Environment.   The Big Game Draw is a significant operational function, stewarded by the Fish and Wildlife Branch and supported by the Finance and Administration Branch.

In essence, the Big Game Draw is a very specialized licence issuance process where the Fish and Wildlife Branch performs the services of a licence vendor. At present, the licence processes for the Big Game Draw differ greatly from the issuance of other licences. There are challenges associated with operating different processes to achieve similar results. There is an opportunity, through an automated hunting and angling licensing project, to streamline and mature the Big Game Draw processes to more closely align with other licence issuance methods, with only minor impacts to the Ministry's organization.

6.3.   Current Business Location Challenges

Vendor Locations

Some vendors are located in remote areas of the province with limited access to services such as regular mail or telephone. In such areas vendors have limited ability to request licences, request support towards licence issuance, obtain additional licences or remit issuance information. Exchange of information is difficult in some rural or remote areas.

All vendor support is performed remotely based from the Ministry's head office in Regina. In-person assistance for vendors is not feasible.

Compliance and Enforcement – Field Work

Hunting and angling activities are generally performed in the outdoors. As such, compliance checks are also performed by Conservation Officers in the outdoors, away from an office. Conservation Officers rely upon radio and telephone communications, via the Provincial Enforcement Centre Dispatch, for the supply of information from computerized systems.

From time-to-time licences may be issued by officers in the field or from a temporary field office. In these special situations, the ability to issue the correct type of licence can be a challenge.

6.4.   Current Business Data Challenges

Electronic Data Collection

Licensee data is collected at the point of licence issue. The ability for the Ministry to obtain licensee data in electronic format is a challenge.

Data Integrity

Licensee data is desired by several different Ministry areas for a number of uses. There is a challenge to ensure that data is consistent for all uses. A challenge for the Ministry is to minimize data isolation (data silos), that is, small specialized databases where licensee data is copied and used for a specific purpose. This creates data redundancy within the Ministry. With the data redundancy, data may be updated in one place but not another. The data loses synchronization and integrity and hence loses its value to the Ministry.   The Ministry's efforts to minimize incorrect, redundant, and conflicting datasets is an ongoing and significant challenge.

Access to Data

Access to business data is required in several areas of the Ministry, including by staff members working in the field such as Conservation Officers or biologists.   The Ministry has multiple communications channels available including radio, telephone, or Government of Saskatchewan networks.   However ensuring staff members have appropriate access to hunting and angling licensing data remains an ongoing challenge.

Personal Financial Data and Transactional Data Security

Online applications for licences accept credit cards as a form of payment. The Ministry is challenged to ensure that personal financial data (such as credit card information) and financial transactional data is secured.

6.5. Current Business Application Challenges

Existing Applications

The LIPS and Big Game Draw database software applications are old, difficult to maintain and have been developed using out-of-date software development tools. These applications have long outlived their expected life cycle and are no longer fulfilling their intended function. Upgrades to these existing applications are not available. Development software bug fixes or security patches are no longer available from the development software provider. Continued use and maintenance of these applications is a high risk challenge to the Ministry.

Existing software applications are not designed (nor did the development software technology allow) for multiple simultaneous users. Database functions such as table and record locking and conflict resolution were not available at the time the applications were developed. The limited functionality of the old development software cannot meet the current industry standards for software application usability, functionality or security. The Ministry is challenged to uphold industry standards towards software application usability, functionality and security.

There are a few existing applications developed in Microsoft Access by Ministry staff. While Microsoft Access is a powerful, modern and useful application development platform, it is not well suited for enterprise applications. Microsoft Access software applications, generally, are developed to serve specific purposes. As a result, the data within the Microsoft Access applications becomes isolated from the rest of the Ministry, increasing data risk to the Ministry and reducing value of the data to the Ministry. It is an ongoing challenge to the Ministry to create databases to support program functions, while at the same time, not creating new risk or reducing the value of Ministry data.

Diversity of Users

Hunting and angling licence information is required for a diverse range of users. Not all hunting and angling information and applications functions should be available to all types of users. Careful consideration will be necessary to ensure the appropriate users have proper access to software applications, while at the same time, ensuring that data integrity and privacy is protected.

Application Integration and Interfaces

Hunting and angling licence related software database applications may exchange data with other, internal and external, software database applications. These systems may include:

- Hunter Safety Certification database (Saskatchewan Association for Firearm Education),
- Trapping Course database (Ministry of Environment),
- Saskatchewan Health Card validation check (Ministry of Health),
- RIP (Ministry of Environment),
- FMS (Ministry of Environment),
- MIDAS (Ministry of Finance)

The Ministry's ability to enable data exchange interfaces between software database applications is dependant upon the Information Technology Office's office ability to implement a technical solution. The mandated relationship between the Ministry of Environment and the Information Technology Office, at times creates conflict, delays or miscommunications which impede the Ministry's ability to implement and maintain software database data interfaces.

Software application interfaces, where two or more software applications must interact in real-time, increases the difficulty for the Ministry to reach a technology solution. Integration of software applications necessitates involvement of additional stakeholders, either internal to the Ministry or external. This increases the number of dependencies, communications channels, and opportunities for conflict or delay in the process. The Ministry is challenged to minimize the number of software application integration points, while optimizing realized value to the Ministry and the other stakeholders.

6.6. Current Business Technology Challenges

Electronic Data Communications

All Ministry offices have some level of electronic data communications available to support network services. The Ministry has been diligently working to improve the level of network services at all locations to a minimal, acceptable level to support business and Ministry programs. As technology requirements for data communications continually increases, the Ministry faces an ongoing challenge to deliver adequate network services to smaller or more remote offices.

Voice Communications

Conservation Officers and other field staff require access to licence information from the field. The Provincial Enforcement Center is the primary communications centre for field staff. Communications with the Provincial Enforcement Centre is performed using radio or cellular telephone communications. There are vast areas of the province where neither radio nor cellular telephone coverage is available. It is an ongoing challenge to maximize field staff member's access licence information from the field.

7.   Future Business Requirements

Drawing Name:	HAL - Future Vision		Location:	Ministry of Environment
Fish & Wildlife	Compliance and Field Services	Customers	Vendors	Finance & Administration

| Author: | Stacy Lloyd | Date: | August 13, 2008 | Revision: | 01 |
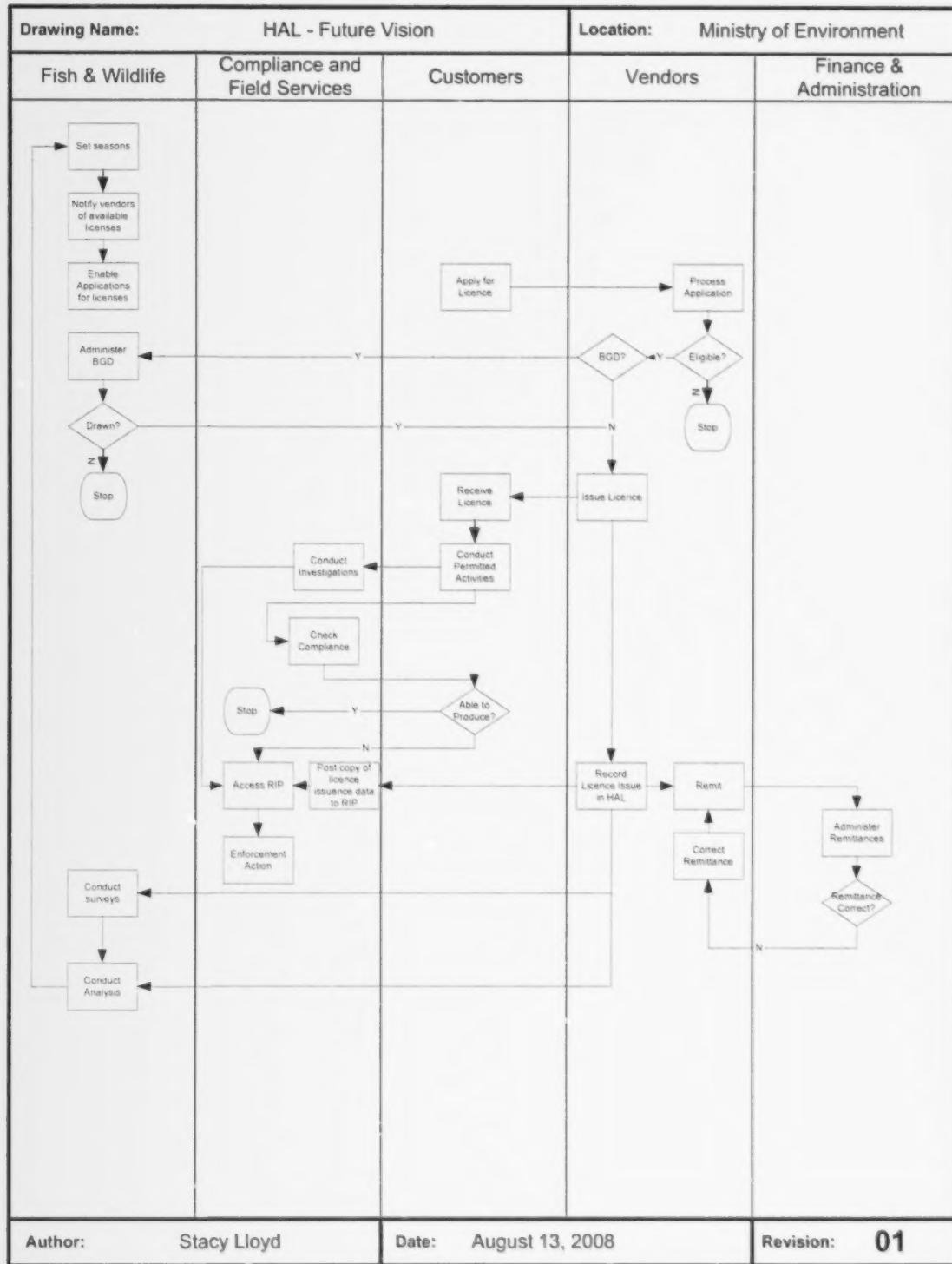
7.1.   Future Business Process Requirements

Define Hunting and Angling Seasons

The Ministry will continue to require the ability to establish hunting, angling and trapping seasons and associated regulations. Most of the information required to define seasons is expected to continue to be gathered through population analysis conducted by Fish and Wildlife Branch biologists. However, detailed licensing data will provide an additional and valuable source of information and perspective for the Fish and Wildlife Branch as they work through the season definition process.

Further, the types, and quantities of licensing released by the Ministry for issue will be determined based on the harvest seasons and the associated rules/regulations established by the Fish and Wildlife Branch. Defined harvest seasons will be a requirement for the issuance of licences.

Application for Licences

Hunters, anglers and trappers will require accessible means to apply for hunting or angling licences.   Hunters and anglers will also required feedback from their application. Customer applications for licences are expected to include the following licence types:

- Angling licences
- Wildlife Habitat Certificates
- Hunting licences
- Fur licences
- Outfitter/Resource Allocation licences
- First Nations Wildlife Harvest permits,
- Lac La Ronge Angling Endorsements
- Big Game Draw

It is expected that customer applications will be able to be completed and submitted for other permissions in the same manner as the hunting and angling licences. Ministry permission which will require alternate customer application processes (not compatible with automated hunting and angling licensing) are expected to include:

- Special Permits
- Subsistence hunting or angling permits
- Outfitting licences
- Commercial fishing licences

These permission types are very different from hunting and angling licences and generally require unique conditions and manual processing. Therefore, it is not expected these will be issued through an automated hunting and angling licence process.

Licensee Eligibility

The ability for a licensee to demonstrate their eligibility to obtain licences will continue to be required by the Ministry. Eligibility to obtain a licence will continue to require customer applicants to provide to the Ministry:

- Customer name,
- Address
- Gender
- Date of Birth
- Saskatchewan Health Services Card number (for hunting and fur licences)
- Firearm Safety Certification declaration (for hunting licences),
- Trappers course declaration (for fur licences),
- Declaration signature

The Ministry will also be required to perform checks or obtain customer applicant declarations to demonstrate:

- The customer applicant has previously held a similar licences (for hunting and fur licences),
- The customer applicant is not restricted from holding a licence,
- The customer applicant does not already hold a valid licence of the same type

For Big Game Draw licences, eligibility will continue to have the additional requirement, that Saskatchewan resident customer applicants must first be successfully drawn through the Big Game Draw lottery process to become eligible for one of these special licences.

Hunter/Angler/Trapper identifier (HATID)

A unique, lifelong identifier for each hunter, angler and trapper will be required to track, over time, hunting, angling and trapping activities in the province. It is expected that a hunter/angler/trapper identifier (HATID) will be assigned to each customer applicant upon their first application for a licence using an automated hunting and angling solution.

The HATID should not be a sequential number, but rather, an encrypted number, generated by an algorithm. Each HATID should be able to be tested for validity to deter use of false HATIDs.

The licensee's HATID must be displayed on each licence and seal/tag.

Should, in the future, the Ministry deem that a dedicated plastic card is required to be issued to licensees, the HATID can be utilized as the basis for such a plastic card.

There are a number of other potential Ministry initiatives, such as the Crown Land Administration Management System (CLAMS), Integrated Fire Management Information System (IFMIS), and Timber Information System (TIS) which may also require unique identifiers for Ministry of Environment customers.

A HATID must also be able to be converted and used in the event a broader-based Environmental, Angling, Resources, Trapping, and Hunting identifier (EARTH ID) is implemented for Ministry of Environment customers. Additional, even broader-based, purposes for a HATID may become a requirement.

For Saskatchewan resident hunters, the HATID must be able to be cross-referenced to their Saskatchewan Health Services Card number.

Issue licences and seals/tags

The Ministry will continue to require the ability to issue licences and the associated seals/tags to customers. The Ministry must also be able to accept payment for licences.

Customers will continue to require documented proof, which they must carry, that they have permission to hunt, fish or trap. This documented proof will be in the form of a hunting, angling or fur licence.

The Ministry will continue to require the ability to administer and perform the Big Game Draw. In addition, the Ministry will be required to issue Big Game Draw licences using the same process as other hunting and angling licences and make use of the automated hunting and angling licensing solution.

Re-issue licences

In the event an issued licence has been lost, stolen or otherwise unusable, the Ministry requires the ability to re-issue licences to customers.

Process Vendors Applications and Renewals

The Ministry will continue to require the ability to process applications, from private sector businesses, to become Ministry approved licence vendors. The Ministry will continue to maintain evaluation criteria to ensure that the correct type and numbers of private sector vendors exist to ensure adequate access to licences by the public. The vendor evaluation criteria are expected to continue to include geographic distribution of existing vendors; information currently maintained within the LIPS database.

Additional information may be required to support the vendor application process including: business licence details and government account histories. A database of vendor applications, application evaluation results, and approved vendors will be required.

Vendor Remittances

Vendors will require the ability to tally the number, types and value of licences they have issued over a period of time.

Vendors will require the ability to account for issued licences, the vendor commission amounts, and the amount of funds to remit to the Ministry.

Ministry Remittance Processing

The Ministry requires the ability to receive licence transactional information from vendors. Transactional information includes: the specific vendor, issue date, the type of licences issued, the number of issued licences, the licensee eligibility information, and price of each licence issued.

The Ministry requires the ability to collect, from vendors, payment due to the Ministry through the issuance of its licences by vendors.

The Ministry is required to reconcile payments received from vendors, to the expected amounts as calculated from the issuance data.

Hunter and angler surveys

The Ministry will require the ability to survey hunters, anglers and trappers on any number of hunting, angling or trapping related topics in support of wildlife and fisheries resource management. Access to licensee name, mailing address and demographic information is necessary for the Fish and Wildlife Branch.

Compliance and Investigations

The Compliance and Field Services Branch will require access to vendor and licensee information to support compliance, enforcement and investigations efforts.

Conservation Officers will require the ability to check that specific hunters, anglers or trappers are licensed to hunt, fish or trap. In the presence of a Conservation Officer, the hunter or angler may be required to produce a valid licence to provide the necessary compliance check information. In the event that a hunter/angler cannot produce a licence, a Conservation Officer may still choose to check other records prior to issuing a citation.

Illegal harvest or illegal transport of harvested big game animals will continue to be a concern to the Ministry of Environment. Conservations Officers will require an ability to verify that big game animals have been harvested by a specific legally licensed hunter.

Conservation Officers will continue to conduct investigations. Hunting and angling licence information, when combined with intelligence information gathered through other sources, will be a powerful investigation tool. Hunting and angling licence information will be required to integrate with data within the Resource Intelligence Program (RIP).

Compliance and Field Services will require improved ability to detect fraudulent licensing activity. It will be preferred that restricted or ineligible persons will not be issued licences. It will be preferred that no reason for an application denial be available to a vendor, and the denied customer applicants simply be directed to go the closest Ministry of Environment office to have their license application processed. Records on attempted purchases by restricted or non-eligible persons should be maintained and available to enforcement personnel.

7.2. Future Business Organization Requirements

Vendors

A variety of types of vendors will be required to support the issuance of hunting and angling licences. All vendors will have the same core business processes; to issue licences to the public and remit fees to the Ministry. The methods used by different vendor types to carry out the core business processes may vary somewhat. The Ministry will be required to provide support to all hunting and angling licence vendors with regards to vendor processes, procedures and technologies.

Private Sector Vendors

Private sector vendors will be required in towns and cities throughout Saskatchewan to provide convenient access to licences, seals/tags, and regulatory information to Ministry customers.

A balance will be required on the number of private sector vendors. An optimal number of vendors are necessary to ensure excellent access to licences for the public, while, at the same time, minimizing the burden placed upon the Ministry to support vendors. To maintain a balance, it will be necessary for the Ministry to continue to set and maintain expectations on private sector vendors such as issuance volumes, vendor hours of operations and vendor density based on service area population.

Rural or Remote Private Sector Vendors

Private sector vendors will be required in rural and remote areas of the province to provide access to licences and seals/tags for the public in those areas.

To maintain a balance on the number of rural or remote vendors, it will be required that the Ministry maintains expectations towards geographic distribution of rural and remote vendors.

Outfitters

Outfitters will require the ability to obtain and distribute Outfitter Resource Allocation Licences to their customers.

It will be preferred by outfitters, that they be able to obtain and distribute Outfitter Resource Allocation Licences from their place of business, often in remote areas of the province.

The Ministry desires that Outfitter Resource Allocation Licence information be available to the Ministry, within 24 hours of the allocation.

Ministry of Environment Field Office vendors

It will be desirable that licences continue to be issued from Ministry of Environment field offices as a matter of convenience to the public. Licensees may also seek information from other Ministry staff and resources through the field offices. Ministry of Environment field offices offer friendly local service as well as additional information valued by hunters and anglers.

Virtual Vendor Services

It will be desirable for the Ministry to issue licences through means other than in-person vendors, to increase access to licences for the public. Methods such as online issuance, telephone, and mail requests provide additional opportunities by which the public may obtain licences.

In particular, instant online issuance may, in certain cases, provide a more convenient method for some customers to obtain licences rather than visiting an in-person vendor.

It is expected that seals/tags will not be issued through virtual vendor services. It is feasible that a customer obtains a licence using virtual vendor service, and then visits an in-person vendor to obtain any necessary, accompanying seal/tag.

Big Game Draw Licence Vendor

The Big Game Draw program will continue to issue licences and seals/tags, following essentially the same general process as other vendor types. The Big Game Draw licence issuance functionality requires additional eligibility criteria to be met, specifically; a Saskatchewan resident Big Game Draw applicant must be drawn from the lottery to be eligible to obtain a licence.

The Big Game Draw is expected to continue to offer a different type of licence application, team draws, where multiple hunters will be allowed to apply together for a set of licences. The concept of licence vendors within the Ministry will need to expand to include the Big Game Draw as a vendor. An automated hunting and angling solution will be required to support the Big Game Draw as a special type of licence vendor.

It will be required that customers apply, using an online interface, to participate in the Big Game Draw. It is important to note that the ability for Big Game Draw applicants to submit paper Big Game Draw applications is scheduled to be phased out by 2010.

Financial Processes

The Ministry of Environment is required to follow financial processes as established within the Financial Administration Manual (FAM) administered and mandated by the Ministry of Finance.

7.3.   Future Business Location Requirements

Licence Vendor Locations

Private sector licence vendors will be required throughout the province of Saskatchewan (urban, rural or remote) to ensure hunters and anglers have appropriate access to licences. Licence vendor locations must be geographically distributed to optimize the public's access to licences while, at the same time, minimizing support efforts provided by the Ministry.

Ministry Field Offices

It is expected that Ministry field offices will continue to be required throughout the province of Saskatchewan to provide a variety of Ministry services to the province, including the issuance of hunting and angling licences.

Most Compliance and Field Services work, including hunting and angling compliance, enforcement and environmental support work, will continue to be performed by Conservation Officers stationed at Ministry Field offices.

Field Work

Much of the hunting and angling compliance work will continue to be performed in the field, often in rural or remote locations. Conservation Officers in the field will require proper compliance tools, including timely and accurate access to information to support compliance efforts and officer safety.

The Ministry will desire the ability for Conservation Officers to check, in real-time from the field, hunter and angler licensing information. Real-time, field access to information is expected to significantly decrease officer efforts in the field and reduce manual archived licence searches.

7.4.   Future Business Data Requirements

Core Licence Data Requirements

The Ministry will continue to require that all hunting and angling licences display a core set of information. Much of this information will be collected on the licence application, electronically stored in a database and displayed on licences and seals/tags. Core license data will include:

- Information about the licence
  - Resident type
  - Licence type
  - Valid year or season
  - Licence serial number
- Information about the hunter/angler/trapper, including
  - Name
  - Date of Birth
  - Gender
  - Address (Street, City/Town, Province/State, Postal/ZIP Code)
  - HATID
- Information about the applicant's eligibility to possess the licence
  - The licensee's signature on the declaration
- Information about the licence's issuance
  - Date the licence was issued (this may include the date and time)
  - Vendor identification of the issuing vendor

Additional Licence Data Requirements

In addition to the core licence data, specific licence types will be required to display an additional set of information. This additional information will be collected on the licence application, electronically stored in a database and displayed on the appropriate licences and seals/tags.

Angling Licence data

The core licence data requirements meet all the data requirements for regular season angling licences.

All 3-day angling licences will also require date ranges for the 3 consecutive days the licence will be used and valid:
- Date licence is valid from
- Date licence is valid to
-

Wildlife Habitat Certificate data

The Wildlife Habitat Certificate will continue to be a pre-requisite to all hunting and trapping licences. The core licence information will be collected and displayed on the Wildlife Habitat Certificate, then, hunting and trapping licences will be associated with the Wildlife Habitat certificate.   In addition to the core licence information, the Wildlife Habitat Certificate will also require:

- Saskatchewan residency information:
    - Saskatchewan Health Services Card number (Saskatchewan residents)
    - Canadian Armed Forces or Royal Canadian Mounted Police identification (CAF or RCMP)
- Certificate purchaser signature
    - The purchaser of the licence must also sign the licence
- Additional information for trappers (to be provided on the Wildlife Habitat Certificate only when a Fur licence is purchased)
    - Fur Conservation Area (FCA) Name
    - Fur Conservation Area (FCA) Number
    - Trapper Zone
    - Trapper Number
- Additional information for licensees under the age of 16 years.
    - Parent or guardian name
    - Licensee name
    - Signature of Parent or guardian declaring their permission for licensee to engage in hunting or trapping

No additional residency information is required for Canadian resident or non-resident hunters.

Hunting Licence data

It is expected that each hunting licence will continue to be affixed, attached or otherwise represented on a Wildlife Habitat Certificate. The core licence information will be displayed on the Wildlife Habitat Certificate, however, on each hunting licence; the following additional data will be required:

- Information about the licence
    - Resident type
    - Licence type
    - Valid year or season
    - Licence serial number
    - Valid Wildlife Management Zone (as required)
- Information about the hunter
    - HATID
    - The Wildlife Habitat Certificate serial number (this must match the serial number on the Wildlife Habitat Certificate to which the licence is affixed).
- Information about the licence's issuance
    - Date the licence was issued (this may include the date and time)
    - Vendor identification of the issuing vendor

Seals/Tags

It will continue to be required that seals/tags share the same serial number as the associated licence. The licensee's signature is required and must match the signature on the Wildlife Habitat Certificate. It is expected that additional information will be required to be displayed on seals/tags:

- Information about the licensee
    - Name
    - HATID
    - The Wildlife Habitat Certificate serial number (this must match the serial number on the Wildlife Habitat Certificate to which the licence is affixed).

Fur Licence data

It is expected that each fur licence will continue to be affixed, attached or otherwise represented on a Wildlife Habitat Certificate. The core licence information will be displayed on the Wildlife Habitat Certificate, however, on each fur licence; the following additional data will be required:

- Information about the licence
    - Licence type
    - Valid year or season
    - Licence serial number
- Information about the trapper
    - HATID
    - The Wildlife Habitat Certificate serial number (this must match the serial number on the Wildlife Habitat Certificate to which the licence is affixed).
- Information about the licence's issuance
    - Date the licence was issued (this may include the date and time)
    - Vendor identification of the issuing vendor

Outfitter Resource Allocation Licence (RAL) data

It is expected that each RAL will continue to be affixed, attached or otherwise represented on a Wildlife Habitat Certificate. The core licence information will be displayed on the Wildlife Habitat Certificate, however, on each RAL; the following additional data will be required:

- Information about the licence
  - RAL type
  - Valid year or season
  - RAL serial number
  - Hunting licence type
  - Hunting licence number
- Information about the outfitter
  - Outfitter Licence number
  - Outfitter business name
- Information about the hunter
  - HATID
  - The Wildlife Habitat Certificate serial number (this must match the serial number on the Wildlife Habitat Certificate to which the licence is affixed).
- Information about the licence's issuance
  - Date the licence was issued (this may include the date and time)
  - Vendor identification of the issuing vendor

First Nations Wildlife Harvest Permit data

It is expected that each First Nations Wildlife Harvest permit will continue to be affixed, attached or otherwise represented on a Wildlife Habitat Certificate. The core licence information will be displayed on the Wildlife Habitat Certificate, however, on each First Nations Wildlife Harvest permit; the following additional data will be required:

- Information about the permit
  - Species type
  - Valid year or season
  - First Nations Wildlife Harvest permit serial number
  - Date permit is valid from
  - Date permit is valid to
  - All special provisions, as added by the Ministry of Environment at the time of permit issuance
- Information about the Indian Reservation which permitted the harvest
  - Indian Reservation number
- Information about the hunter
  - HATID
  - The Wildlife Habitat Certificate serial number (this must match the serial number on the Wildlife Habitat Certificate to which the licence is affixed).
- Information about the licence's issuance
  - Date the licence was issued (this may include the date and time)
  - Vendor identification of the issuing vendor

Lac La Ronge Lake Endorsement Data

The Lac La Ronge lake endorsement will continue to recapture much of the core and angling licence data. The Lac La Ronge lake endorsement will also require additional information. The full data required for the Lac La Ronge lake endorsement will be:

- Information about the licence Information
    - Licence type (Lac La Ronge Lake Endorsement)
    - Valid year or season
    - Licence serial number
    - Angling Licence number
- Information about the angler, including
    - Name
    - Date of Birth
    - Gender
    - Address (Street, City/Town, Province/State, Postal/ZIP Code)
- Information about the licensee's eligibility to possess the licence
    - The licensee's signature on the declaration
- Information about the licence's issuance
    - Date the licence was issued (this may include the date and time)
    - Vendor identification of the issuing vendor

In addition, the Lac La Ronge Lake Endorsement will continue to serve as a special seal/tag. A catch and retain record of all lake trout landed on Lac La Ronge is to be recorded on the endorsement.

- Catch Information
    - Date of catch
    - Catch Location (Lac La Ronge Zone, a map is included on the endorsement)
    - Total Length (length of the fish caught and retained)

Lac La Ronge endorsements are to be returned to the Ministry of Environment when the angler has finished angling on Lac La Ronge for the season.

Application to be a Licence Vendor data

Businesses that wish to become licences vendors will continue to be required to apply to the Ministry. The vendor application will be evaluated by the Ministry. Upon approval by the Ministry, the business may become a licence vendor. Vendor application data will continue to include:

- Information about the application
  - Date the application was submitted to the Ministry
- Information about the applicant
  - Applicant Name
  - Company ownership (Owned, Franchised)
  - Applicant date of birth
- Information about the type of applicant
  - Corporation
  - Partnership
  - Sole Proprietorship
  - Individual(s)
- Information about the business structure of the applicant (Partnership, Sole proprietorships or individuals additional information)
  - Partner or Associate Names (Full name, Address)
  - Business name
  - Business address
  - Business phone number
  - Nature of Business
- Additional information about the Corporation
  - Corporation Name
  - Registered Office
  - Address
  - Phone number
  - Corporate Seal
  - Business name of Corporation
  - Business address of Corporation
  - Directors names
  - Directors addresses
  - Nature of business
- Information about the applicant's contact details
  - Name of contact person
  - Email address of contact person
  - Off-season address of contact person
  - Off-season phone number of contact person
- Address where licences are being issued
  - Address
  - Phone number
- Business hours of operation
- Information about the applicant's banking information
  - Name of applicant's bank
  - Phone number of applicant's bank
- Employers of all individuals listed
  - Employer name

- Employer address
- Eligibility information
  - Bankruptcy history
  - Wildlife or Fisheries convictions
  - Previous licence vendor details
- Vendor succession information
  - Name of previous vendor
  - Address of previous vendor
- Other Ministry business relationships
  - Outfitter (Outfitter Declaration, Outfitter name)
- Other Ministry relationships
  - Specific contracts, leases or other agreements.
- Type of licences wished to issue
  - Angling (Resident, Canadian-resident, Non-resident)
  - Game Bird (Resident, Canadian-resident, Non-resident)
  - Big Game (Resident, Canadian-resident, Non-resident)
  - Trapping
- Declaration of application and acceptance of terms
  - Applicant's signature
  - Additional signatures for partners or other individuals

It is expected that during the hunting and angling licensing solution implementation, vendor application information will be re-visited in detail and changes will occur to these requirements.

Application to be a Licence Vendor, Verification Information

The Ministry will continue to assign each vendor application to a Conservation Officer for verification and assessment. The Conservation Officer's report and recommendations will be required to be retained and accessible for future reference.

- RIP Check
  - RIP Check performed indicator
- Conservation Officer Report & Recommendations
- Recommendation Indicator (Recommend as vendor, Not Recommended)
- Conservation Officer Name
- Conservation Officer Address
- Conservation Officer Date
- Conservation Officer Signature

Vendor Data

The Ministry of Environment requires that information on vendors be maintained:

- Vendor ID (a unique vendor identifier)
- Vendor type
- Region location (based upon the Ministry grid)
- Vendor business name
- Vendor business mailing address
- Vendor business seasonal mailing address
- Vendor contact name
- Vendor phone numbers
    - Business
    - Owner
    - Seasonal
    - Sales office
- Vendor business operating hours
- Vendor business location (examples: name of closest town, lake, outfitting location)
- Types of licences issued by the vendor

It is expected that during the hunting and angling licensing solution implementation, vendor information will be re-visited in detail and changes will occur to these requirements. Further, it is anticipated that more detailed geo-spatial data will be required by the Ministry.

Vendor Status

The Ministry will continue to maintain statuses on existing licence vendors to indicate the current operational condition of each vendor. A few example statuses include:

- Active
- Retired
- Under new management
- Business closed

Current and historic vendor status data will be required and provide the Ministry with an understanding of each vendor's situation over a period of time:

- Information about Vendor Statuses
    - Status Date
    - Status
    - Reason code
    - Restriction period

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Licence Vendor Remittance data

Licence vendors will continue to be required to collect fees from the issuance of licences. It is expected that licence vendors will continue to retain a commission from each issuance, based on a commission grid. On a regular, scheduled basis, licence vendors will be required to remit the collected fees to the Ministry. It is expected that the remittance licence issuance details and fee calculations will be performed within computerized software and stored in a database.

- For each type of license the following information will be tracked by the automated hunting and angling software and available to both the pertinent vendor and the Ministry:

- Licence type
- Licence serial numbers for issued licences
- Licence value for issued licences less vendor commission
- Vendor commission amount
- Quantity of issued licences

For each vendor remittance, the following information is expected to be retained within the automated hunting and angling software database and available to both the pertinent vendor and the Ministry:

- Vendor ID
- Remittance date
- Total value of the remittance (total value of issued licences less total commission)
- Remittance status (examples: remittance complete, pending, overdue, reconciled, variance found)

Licence Issuance Data

The Ministry will require that all licences issued by vendors be tracked such that the Ministry will understand the numbers and types of licences issued by each vendor.

Vendor Transactional Data

The Ministry will require that transactional data, that is, data regarding the types, amounts, and revenues associated with licences each vendor issues, be maintained for each vendor:

- Licence Type
- Licence Serial Numbers
- Licence Description
- Licence Price
- GST indicator
- Historic licence issuance statistics

MIDAS data

It is anticipated that the Ministry of Finance will implement the MIDAS Accounts Receivable (A/R) module prior to the implementation of an automated hunting and angling licensing solution. Should the MIDAS A/R be ready, accounts receivable data from licensing sales will be required to be extracted from the licensing system and provided to the Ministry of Finance for subsequent posting to the MIDAS A/R.

In the event that the MIDAS A/R is not available, accounts receivable data from licensing sales will be required to be extracted from the licensing system and provided to the Ministry of Environment's Financial Management System (FMS). Daily transactional batches will be created from FMS and provided to the MIDAS General Ledger (G/L), as is currently performed.

Historic Licensee data

The Ministry will require that, at a minimum, ten (10) years of historic licensee data be retained. Much of this data is located in the RIP database. The quality of the historic licensee data is uncertain. A detailed review and analysis of the historic licensee data will be necessary to ascertain the condition of that information. It is expected that a data conversion of the historic licensee data, from the RIP system to the new automated hunting and angling licensing system, will be feasible and highly desired by the Ministry.

7.5. Future Business Application Requirements

Automated Hunting and Angling Licensing Software Application

The Ministry requires software to support the issuance of hunting, angling and fur licences. The software must be able to:

- Allow the Ministry to define a wide range of licences and licence types, including hunting, angling, trapping licences, for Ministry defined seasons, Wildlife Management Zones, angling zones, Ministry defined zones, for various licensee types (examples: Resident, Canadian-Resident, Non-resident, Youth, Senior)
- Allow the Ministry to set various prices for licences, based upon licence type
- Provide information to vendors regarding which licences are currently available for issue.
- Provide information to vendors regarding when specific licences will be available for issue.
- Allow the Ministry to enable a specific licence to be issued.
- Accept an application from a hunter, angler or trapper for a licence
- Save the application information to a database for Ministry reference and analysis.
- Test and validate a customer licence application for correctness, prior to allowing a licence to be issued
- Test and validate a customer licence application for applicant eligibility to obtain the requested licences, prior to allowing a licence to be issued (example: given the residency information, cross-reference a residency database to validate, cross-reference an applicant to a restricted licensee list, etc.)
- Deny the issuance of a licence should the application not meet Ministry criteria.
- Allow the Ministry to enable or disable, all or specific vendors, to issue specific licences.
- Produce a licence specific to the particular customer
- Automatically generate and issue a licence should the application meet Ministry criteria
- Save the issuance results to a database for future Ministry reference and analysis.
- Save financial transaction data to a database.
- Track accounts receivable, by vendor, for all licences issued.
- Produce accounts receivable summation reports, by vendor, by date for each vendor
- Automatically update each vendor's account upon receipt of a payment from that vendor.
- Enable carry-over of accounts receivable in the event of over-payment or under-payment.
- Allow the Ministry to assess and apply interest on overdue accounts.
- Produce overdue account information to the Ministry, to enable the Ministry to conduct accounts receivable collections activities.
- Allow the Ministry's authorized Compliance and Field Services staff members to check the database for issued licences
- Allow the Ministry's authorized Compliance and Field Services staff members to cross-reference licence data with other compliance and enforcement data, including data maintained within RIP.
- Enable Fish and Wildlife staff to extract licensee data for the purposes of surveys or Ministry communications to hunters/anglers
- Allow the Ministry to run queries and reports on licence issuance information to support analysis on hunting/angling pressures
- Allow the Ministry to revoke an issued licence in the event the licensee becomes restricted during the valid licence period
- Accept customer licence application data, process application and issue a licence within one minute, using telephone line communications.
- Accept customer application data for the Big Game Draw.

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- Allocate Big Game Draw applications into appropriate pools.
- Perform a lottery function to identify successful applications to be issued Big Game Draw licences.
- Issue Big Game Draw licences to successful applicants
- Accept online licence applications
- Process online credit card payments
- Ability to produce appropriate seals/tags, at the time of licence issue, or subsequent to licence issue using printers and special sticker media for seals/tags.
- Enable various user types, with appropriate security for each user type (hunter/angler, vendor, Finance and Administration staff, Fish and Wildlife staff, Compliance and Field Services staff, etc.)
- Optionally, allow the Ministry to accept applications by telephone and to issue (no seal/tag) licences by fax or regular mail

The Ministry will be required to conduct detailed business analysis prior to solution selection. It is expected that additional automated hunting and angling licensing software application requirements will be identified through the detailed business analysis process.

7.6. Future Business Technology Requirements

The Ministry can expect:

- In general, the new automated hunting and angling licensing software will be required to meet, or exceed, technology standards as defined by the Information Technology Office.
  - Suitable servers and operating systems will be required for implementation, test and production technical environments
  - A relational database will be required, such as Microsoft SQL Server or Oracle
- Licence vendors will require access to a high speed internet connection or telephone service to facilitate online transaction processing.
- Licence vendors will require web-enabled PCs or telephone communications licence issuing devices and printers to produce licences and seals/tags.
- It is expected that existing Ministry network and wide-area network services will be sufficient to support the new automated hunting and angling licensing software for Ministry offices.
- It is expected that existing Ministry workstations and web browsers will be sufficient to support the new automated hunting and angling licensing software for Ministry offices.

8. Future State Impacts

An Automated Hunting and Angling solution will impact hunters, anglers, trappers, vendors, and the Ministry of Environment.

An automated hunting and angling licensing solution is anticipated to be beneficial to all stakeholders.

8.1. Future Business Process Benefits

Reduction of Manual Processing

Point-of-issue licence data collection is expected to reduce the Ministry's manual processing efforts to:

- Order pre-printed licences
- receive and store pre-printed licences
- allocate pre-printed licences to vendors
- track licences as 'accountable forms'
- remittance processing and accounts receivable administration
- archive issued and unissued paper licences
- search for manually archived paper licences
- data entry of licensee data

Point-of-issue licence data collection is expected to reduce the vendor's manual processing efforts to:

- perform financial remittances,
- tally licence issuance numbers
- calculate licence issuance fees and totals
- re-order additional licences

Improved Customer Access to Licences

It is anticipated that customers will have improved access to licences:

- Improved ability for customers to apply for licences online
- New ability for customers to print licences immediately from their own printer
- Improved ability for customers to pay for licences online using credit cards
- Elimination of situations where vendors run out of specific licences

Elimination of Licence Allocation to Vendors

An automated hunting and angling licensing solution will eliminate the Ministry's need to allocate licences to vendors. Licences will continue to be issued by vendors, but licences will be produced and issued directly through the use of the automated licensing system.

Reduced Inventory and Distribution Management (Accountable Forms)

Licences will be printed at the time of issue, eliminating the need for pre-printed licences and the need to manage pre-printed licences as government inventory (accountable forms). Further, the need for the business process of tracking and checking of licences received from the printer by the Ministry will be eliminated.

The system will track all licences issued by every vendor. The automated hunting and angling database, rather than manual tracking, will become the book of record for issued licences.

Re-ordering of licences by vendors will no longer be necessary. Vendors will have the ability to simply issue licences from the system. The Ministry will have the ability to limit the numbers of specific licences available for issue within the system, once that limit has been reached, the system will no longer issue those licence types.

Unissued licences will no longer exist. Vendors will no longer be required to return and account for unissued licences. The Ministry will no longer be required to account for unissued licences.

Improved Remittance Process

For each vendor, the licences issued by that vendor will be tracked within the automated hunting and angling system. Remittance information will be tallied and calculated by the system for the vendor, eliminating the need for remittance and commission calculations to be manually performed by the vendors.

Similarly, system generated reports, will be available to Ministry staff to reconcile the system calculations to the actual accounts receivable information.

Improved Compliance and Enforcement Information

Hunting and angling licence data will be available, within 24 hours of a licence issue to Compliance Officers at their office desk or in the field via communications with the Enforcement Center Dispatch. Access to licence information is expected to be available to the officer within 1 minute of the request being made through the Enforcement Center Dispatch – less time than is required to check a driver's licence, a vehicle registration or perform a Criminal Records Check.

Access to licence information will also benefit Conservations Officer's ability to conduct investigations. Licence information will be continually accessible to Conservation Officers to enhance their ability to solve fish and wildlife crimes. Further, the ability to cross-reference licence data with other information sources will enhance investigative intelligence and evidence gathering capabilities of Conservation Officers.

Improved Ability to Manage Natural Resources

An automated hunting and angling system will provide the Fish and Wildlife Branch with new opportunities to manage Saskatchewan's natural resources.

- additional seasons may be added at anytime of the year
- brand new seasons may be introduced and added
- seasons may be interrupted, changed or decreased in the event a particular resource is stressed or threatened
- maximum limits on the number of licences may be established
- existing licensees for a specific zone or licence type may be contacted for notification of hazards (example: bird hunters may be notified of an outbreak of avian flu in a certain area),
- late changes to regulations may be communicated directly to licensee's (example: big game hunters may be notified of changes to garment colour requirements, anglers may be notified of changes to limits on a specific lake)
- Changes to regulations may be placed directly onto licences as a reminder to licensees.
- Surveys may be developed and directed to specific types of licensees without manual retrieval of names and addresses (example: Canadian resident survey may be sent directly to Canadian resident licensees.)
- Survey results can be expected to be more accurate as current licensee information may be used to survey licensees (rather than 3 year old licensees data)
- Analysis can be performed on reliable and accessible data to assist program planning and enhance natural resource management science

New Fraud Prevention, Improved Fraud Detection and Improved Licence Data

An automated hunting and angling system will enable new data tests to help prevent the fraudulent purchase of licences and improve data collection

- Saskatchewan residency confirmation may be performed prior to a licence being issued
- The issue of duplicate licences will be automatically prohibited by the system
- Replacement of lost or stolen licences will be available to customers where the system shows that a licence is already held by the licensee
- The issue of licences to restricted hunters or anglers will be automatically prohibited by the system
- The issue of hunting licences to persons who have not previously held a hunting licence, or who do not hold a valid Hunter Safety Certificate can be prohibited by the system
- Licence issue date will be recorded by the system at the time of licence issue

Improved Privacy

Licence application information will still be required to be provided to the Ministry by the applicants. An automated hunting and angling system will provide options for the Ministry regarding the capture and administration of customer information. Licence application information will be required and collected at the time of licence application. However, this information will be submitted directly to a secured database. It is feasible that portions of the application information may be used immediately for verification and validation and not permanently stored within the Ministry's database (example: licence applicant credit card information).

8.2.   Business Organization Benefits

Big Game Draw

It is anticipated that Big Game Draw licences will be able to be issued using the automated hunting and angling licensing system. This will require some organizational shift by the Fish and Wildlife Branch to follow issuance processes similar to those followed by vendors. This will also require Finance and Administration Branch to treat the Fish and Wildlife Branch as a specialized vendor type. These organizational and process shifts are anticipated to place financial responsibilities in areas where they are best situated within the Ministry. These operational and process shifts are also expected to result in reduced effort and frustration in both Branches. It is anticipated that these shifts will not place any negative impact on either Branch.

8.3.   Business Location Impact

Customer Location Benefits

An online automated hunting and angling licensing system will provide greater access to customers to obtain hunting and angling licences.

Vendor Locations Impact

Research into other jurisdictions indicates that an automated hunting and angling licensing system will marginally impact vendor locations. Technologies exist in the marketplace which requires only a telephone connection to communicate with the licensing database and enable the issuance of licences. These devices are similar to credit/debit card readers and can be used to accept customer licence applications as input on a keypad.

Satellite-based internet network services also exist which will permit the issuance of licences from any location within Saskatchewan.

Compliance and Enforcement – Field Work Benefits

Conservation Officer's ability to obtain licence information from the field (or field office) will be greatly increased. Licence information will be available to officers within 24 hours of issuance using radio or telephone communications via the Enforcement Centre Dispatch. Most of this information currently is not available to officers in the field.

Conservation Officers will also have access to licence information from their office desktop workstations to assist with investigations. This information is, at present, not directly available to officers for compliance and enforcement purposes.

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8.4. Business Data Impact

Electronic Data Collection Benefits

Electronic data collection at the point of licence issuance will:

- Reduce manual data entry efforts by the Ministry
- Decrease times required to transfer information between stakeholders
- Capture new data electronically, not previously feasible for the Ministry to obtain manually
- Improve data integrity through the use of automated data validation and verification testing and database enforced data storage standards
- Improve access to data by all stakeholders
- Allow access to appropriate data to stakeholders authorized to access that data
- Improve data security through the elimination of paper copies
- Improve data security through system based security
- Improve financial transaction security for credit card based transactions

8.5.   Business Application Benefits

Current Applications

Replacement of the existing software applications will benefit the Ministry. New software will be:

- Designed for multiple simultaneous users
- Able to support more users to access licence information
- Able to provide modern security to provide specific system access to specific user types
- Able to operate with modern personal computers, operating systems, servers and printers
- Designed by professional information technology specialist for the specific purpose of issuing hunting and angling licences
- Developed in modern programming languages, consistent with available technical support skill sets.
- Improve the Ministry's ability to interface hunting and angling data with other enterprise software applications
- Retire from the Ministry, software which is aged, limited in functionality and difficult to support.

8.6.   Business Technology Impact

Ministry of Environment Business Technology Impact

Network Impact

No significant impact on the Ministry's existing business computer network is anticipated.

Wide-area Network

No significant impact on the Ministry's existing business wide-area computer network is anticipated.

Internet Services

At peak licence issuance periods, a significant increase in internet-based traffic can be expected from customers and vendors. Sufficient internet communications capabilities will be required to support peak licence issuance periods.

Telephone

No significant impact on the Ministry's existing telephone services is expected.

Servers

New and additional servers are expected to be required to support an automated hunting and licensing system. The number and types of servers will depend upon the specific solution selected by the Ministry during the procurement process.

Workstations

No significant impact on the Ministry's existing computer workstations is expected.

Printers

The Ministry's existing printers are expected to support licence issuance and other Ministry processing needs.

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Vendor Business Technology Impact

Internet Services

It is anticipated that Internet services will be the preferred communications channel used at vendor sites to issue licences. Dial-up (telephone line based) Internet connections may suffice, high-speed Internet services will be preferable. Specific Internet connection specifications will be highly dependant upon the specific solution selected.

Telephone

It is anticipated that telephone-based service will be an alternative communications channel for the issuance of hunting and angling licences. Specific telephone specifications will be highly dependant upon the specific solution selected.

Licence Issuance Devices

It is anticipated that the preferred licence issuance device will be a personal computer, connected to the Internet, with a compliant web-browser and printers.

It is anticipated that telephone-line based devices (similar to credit card devices) will be an alternative issuance device.

Specific licence issuance devices will be highly dependant upon the specific solution selected.

Printers

It is anticipated that two printers will be necessary to issue all types of licences:

- A standard computer printer to issue licences
- A specialized computer printer to issue seals/tags

9. Implementation Challenges

Implementation of a new automated hunting and angling solution will introduce a number of new challenges and require that the Ministry carefully consider options to address these challenges.

9.1. Stakeholder Change Management

Customers (Hunters, Anglers and Trappers)

Communications with customers and education of customers will both be required to assist them in the transition from manual licence issuance to automated licence issuance. Although changes due to licensing automation for customers will be minimal, their expectations must be managed and they must have access to assistance to fully understand the improvements. Hunters, anglers and trappers will need education and support related to:

- New methods in which licences may be obtained
- Any new changes to the licence application process
- A new physical 'look and feel' of licences
- Any changes to how seals/tags are obtained and used

The Ministry will need to take a pro-active approach to addressing and educating hunters, anglers and trappers to promote customer acceptance of the new solution.

Licence Vendors

Of all the stakeholders, private licence vendors can be expected to have the highest level of interest and anxiety regarding any changes to the licensing process. A wide range of vendor reactions can be anticipated. The Ministry will need to take a very pro-active approach to broach automated licensing with the vendor community and to promote vendor acceptance of the new solution.

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Ministry of Environment – Fish and Wildlife Branch

There will be an increased level of work required by the Fish and Wildlife Branch to prepare for the solution implementation. As part of these preparations, Branch staff will be required to:

- assist with business analysis
- assist with requirements gathering
- assist with solution evaluation
- assist with solution implementation preparations
- conduct systems and data testing
- participate in training
- assist vendors to transition to the new system and processes
- assist with 'go live' efforts
- assist customers to transition to the new system and processes
- perform data clean-up of legacy Big Game Draw licence data
- perform data clean-up of legacy Outfitter data
- perform data clean-up of legacy Lac La Ronge Angling Endorsement data
- assist with data conversions to the new system
- perform reconciliations between old and new systems
- archive old data
- assist with the interface between the new system and the Big Game Draw information needs
- assist with the interface between the new system and the Outfitter information needs
- assist with the interface between the new system and the Lac La Ronge Angling Endorsement information needs
- assist with development of new surveys

The Branch will be challenged to participate in the implementation preparations and the implementation, while at the same time maintaining existing systems, processes and service levels.

Ministry of Environment – Compliance and Field Services Branch

There will be an increased level of work required by the Compliance and Field Services Branch to prepare for the solution implementation. As part of these preparations, Branch staff will be required to:

- assist with business analysis,
- assist with requirements gathering
- assist with solution evaluation
- assist with solution implementation preparations
- conduct systems and data testing
- participate in training
- update processes and develop new compliance and enforcement procedures
- assist with 'go live' efforts
- continue manual data entry of backlogged hunting licences
- perform data clean-up of legacy hunting licence data
- assist with data conversions to the new system
- perform reconciliations between the old and new systems
- assist with the interface between the new system and the Enforcement Centre Dispatch information needs

The Branch will be challenged to participate in the implementation preparations and the implementation, while at the same time maintaining existing systems, processes and service levels.

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Ministry of Environment – Finance and Administration Branch

There will be an increased level of work required by the Finance and Administration Branch to prepare for the solution implementation. As part of these preparations, Branch staff will be required to:

- assist with business analysis,
- assist with requirements gathering
- assist with solution evaluation
- assist with solution implementation preparations
- conduct systems and data testing
- participate in training
- update processes and develop new financial and administrative procedures
- assist with 'go live' efforts
- assist vendors to transition to the new system and processes

In addition, for the retirement of the old LIPS system, branch staff will be required to:

- perform data clean-up in LIPS
- assist with data conversions to the new system
- perform reconciliations between the old and new systems
- archive old data

The Branch will be challenged to participate in the implementation preparations and the implementation, while at the same time maintaining existing systems, processes and service levels.

Ministry of Environment – Field Offices

There will be an increased level of work required by the Ministry's field office staff to prepare for the solution implementation. As part of these preparations, field office staff will be required to:

- assist with business analysis,
- assist with requirements gathering
- assist with solution implementation preparations
- conduct systems and data testing
- participate in training
- update processes and develop new procedures
- assist with 'go live' efforts
- assist customers to transition to the new system and processes

The field office staff will be challenged to participate in the implementation preparations and the implementation, while at the same time maintaining existing systems, processes and service levels.

Saskatchewan Information Technology Office

There will be an increased level of work required by the ITO in their role as technology services provider. Technology aspects of this project will require engagement from the technology services provider to ensure a successful project. The ITO will be expected to:

- assist with solution selection activities,
- prepare technical specifications and requirements
- assist with solution evaluations
- provide recommendations on solution implementations
- assist with solution implementation preparations
- assist with solution technology infrastructure design
- assist with server sizing
- assist with server backup designs
- provide 24/7/365 access to the client licensing issuance web-site
- provide 24/7/365 access for authorized Ministry of Environment (example: Enforcement Centre Dispatch)
- prepare, and routinely practice through simulation, technical business continuity and disaster recovery plans
- provide project management services related to technology infrastructure components of the implementation performed by the ITO

The ITO staff will be challenged to participate in the implementation preparations and the implementation.

9.2.   Technical Support

Hardware and application software technical support will be necessary for customers, vendors and Ministry Staff located throughout the province.

Currently, licensing program support is provided by the Ministry via telephone, email and mail to stakeholders. Hardware and software technical support is provided to the Ministry by the Information Technology Office, the Ministry's technical services provider.

The implementation of a new automated hunting and angling licensing solution will require the design and implementation of new technical support services for all stakeholders. Specific technical support services will be required to meet the unique needs of each stakeholder:

- Customers
- Ministry of Environment, Fish and Wildlife Branch
- Ministry of Environment, Compliance and Field Services Branch
- Ministry of Environment, Finance and Administration Branch
- Ministry of Environment, Field Offices
- Ministry of Environment, Big Game Draw staff
- Private Sector Licence Vendors
- Rural or Remote Private sector Vendors
- Virtual Vendor Services provider

Technical support plans will be dependant upon the specific solution selected by the Ministry. It is expected that the solution provider will be a lead partner to design, develop and deliver a technical support plan for an automated hunting and angling licensing solution.

9.3.   Technology Challenges

Electronic Data Communications

Hunting and angling licence information will be required to be delivered throughout the province. It is anticipated that no one single electronic data communications method will provide complete coverage. New software applications will be challenged to ensure software can be accessed across local area, wide-area, wireless, or dial-up (telephone infrastructure) networks.

Peak Technology Demand Periods

Hunting and angling licence issuance levels are not distributed evenly throughout the year. Immediately prior to a season opening demand for licences is high.   Other jurisdictions with automated hunting and angling licensing solutions have found that peak period demand on technology, particularly in regards to network services, web-interfaces and database access to be a critical challenge.

The Automated Hunting and Angling Licensing project will fail if the technology infrastructure does not sustain peak period loads.

10.   Pre-Implementation Considerations and Recommendations

10.1. Stakeholder Consultation and Communications

Prior to solution selection and implementation, it is recommended that the Ministry conduct further stakeholder consultation and communications.

It is recommended that the Ministry engage with Communications experts to prepare and execute a detailed Communications Plan.

10.2. Procurement and Contract Management

Analysis of other jurisdictions has shown that incomplete, unclear or underdeveloped Requests for Proposal documents increase likelihood of:

-
- implementation issues
- implementation delays
- incomplete implementation
- increased implementation costs

It is recommended that the Ministry of Environment engage a project manager to work through the procurement process.

10.3. Harvested Animal Identification (Seals/tags)

Prior to solution selection and implementation, it is recommended that the Ministry review regulations regarding harvested animal identification and the use of seals/tags.

There are several options to consider:

10.3.1. Eliminate the use of seals/tags

Discussion

Some hunting and angling licensing jurisdictions have chosen to eliminate the use of seals/tags as a means to identify a harvested animal. In those jurisdictions, upon harvest of an animal, a notch is placed in the licence to 'cancel' the licence. The licence then accompanies the licensee until the animal is delivered to the location where the animal is to be processed for consumption.

This option would significantly streamline the licensing processes:

- reduced workloads for the Ministry and vendors
- significantly reduce the requirements for an automated solution
- improve accessibility to licences to customers through reduced need to obtain specialized seal/tag documents
- eliminate the Ministry's requirement to order, receive, ship, administer and manage pre-printed seals/tags special paper

This option would significantly impact the Ministry's ability to conduct compliance and enforcement activities:

- Reduce ability to match a harvested animal to a specific hunter
- Promote the ability for excessive limits to be harvested by customers
- Impede customer's ability to export harvested animals from Saskatchewan
- Increase the need for the Ministry to issue Special Export Permits
-

Recommendation
-

It is recommended that the use of seals/tags be retained by the Ministry.

10.3.2.   Plain paper-based seals/tags

Discussion

Some hunting and angling licensing jurisdictions have chosen to use seals/tags which are printed on plain paper.

This option would improve the licensing processes:

- Enable customers to obtain (print) a seal/tag through online services
- Reduce customers need to visit a licence vendor
- Reduce the technical requirements for specialized printers for seals/tags as part of the automated licensing solution
- Eliminate the Ministry's requirement to order, receive, ship, administer and manage pre-printed sticky-paper seals/tags inventory
-

This option would create new challenges and issues for the Ministry:

- Plain paper seals/tags are less durable than the current sticky paper seals/tags and would more easily spoil in normal field conditions
- Plain-paper seals/tags would be difficult for customers to secure to a harvested animal
- Plain-paper seals/tags would more easily become detached from the harvested animal.
- Increased risk of fraud as plain-paper seals/tags could easily be photo-copied, scanned or otherwise reproduced

-

Recommendation
-

It is recommended that the plain-paper type of seals/tags not be implemented.

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10.3.3.   Ministry provided pre-printed sticky paper seals/tags (as current)

Discussion

Currently, seals/tags are issued at the same time as the licence for the associated species. Each set of seals/tags displays a serial number which matches the serial numbers on the licence. In this way, each seal/tag is associated with a specific licence.

This option proposes that the licences and seals/tags be issued separately and the association of the licence to a seal/tag be performed at the time the seal/tag is issued. A customer would be able to obtain a licence by any means allowed by the Ministry. The customer would then visit an in-person licence vendor to obtain a pre-printed seal/tag. The licence vendor would then associate the seal/tag to the customer's licence by writing the licence serial number onto the seal/tag and the seal/tag serial number onto the licence. This would require an additional set of serial numbers to be introduced to the process. The automated hunting and angling system would be updated by the licence vendor at the time the seal/tag is issued to associate the licence to the seal/tag within the system.

This option would retain effective use of seals/tags:

- Retain field-durability for seals/tags
- Retain existing levels of seals/tags risk of fraud
- Retain existing ability for seals/tags to serve as export permits for customers
- Retain current levels of access to seals/tags by customers
- Retain existing customer understanding of how to properly use seals/tags

This option would create new challenges and issues for the Ministry:

- Create a weaker-than-current association between licences and seals/tags, adding difficulty and potential confusion to the licence issuance process and the compliance process
- Retain requirement for customers to visit an in-person licence vendor to obtain seals/tags
- Retain existing levels of risk that vendors will run out of specific seals/tags
- Retain existing levels for the ordering, special printing, receiving, shipping, administration and management of pre-printed seals/tags inventory
- Create a two-step process for customers

Recommendation
-
The use of Ministry provided seals/tags, prepared and issued by vendors is a viable option.

It is recommended that the Ministry consider this option during the solution selection stage of the project.

10.3.4. Pre-printed, template seals/tags

Discussion

This option proposes that the licences and tag be issued separately and the association of the licence to a seal/tag be performed at the time the seal/tag is issued. A customer would be able to obtain a licence by any means allowed by the Ministry. The customer would then visit an in-person licence vendor to obtain a pre-printed seal/tag. The licence vendor would then associate the seal/tag to the customer's licence through the automated hunting and angling system and printing the licence serial number, licence type, customer information (Name, HATID) onto a generic pre-printed template seal/tag. The automated hunting and angling system would be updated by the licence vendor at the time the seal/tag is issued to indicate that the seal/tag was issued to the customer.

This option would realize new gains towards the issuance of licences:

- Ability for the Ministry to obtain a single (generic) type of pre-printed seal/tag,
- Expected volume discounted cost due to increased volumes of a single styled template seal/tag.
- A single template would reduce risk of vendors running out of a specific type of seal/tag.
- Reduce the Ministry's current efforts to order, receive, ship, administer and manage pre-printed seals/tags inventory (accountable forms)
- Improve information displayed on seals/tags to reduce compliance efforts

This option would retain effective use of seals/tags:

- Retain field-durability for seals/tags
- Retain strong association between licences and seals/tags
- Retain existing levels of seals/tags risk of fraud
- Retain existing ability for seals/tags to serve as export permits for customers
- Retain current levels of access to seals/tags by customers
- Retain existing customer understanding of how to properly use seals/tags

This option would create new challenges and issues for the Ministry:

- Will require that seals/tags be printed by vendors, at the time of issue
- Will require additional technologies by vendors, to enable printing of licence details on seals/tags
- Create a two-step process for customers

Recommendation
-
The use of Ministry provided pre-printed generic seals/tags which are prepared, printed and issued by vendors is a viable option.

It is recommended that the Ministry prefer this option during the solution selection stage of the project.

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10.4. System Availability

Discussion

Online licence issuance will require that the system be available 24 hours per day, every day (365 days a year).

Recommendations

It is strongly recommended that the solution be required to support 24 hour uptime (24 x 365).

Contractual Service Level Agreements with technology providers are recommended to ensure 24 hour system, network and internet connectivity availability.

It is further anticipated that there will be extreme peak periods of activity on the system, such as the days preceding the opening of angling season or the opening of the Big Game Draw applications.   The selected solution <u>must</u> be able to support peak periods of usage. The technology services provider must be able to support system infrastructure during peak periods of use. Service Level Agreements should be in place to ensure adequate peak period performance of the Automated Hunting and Angling System, the network, servers, printers, and Internet connections utilized by the system.

In addition, it is recommended that the Ministry prepare manual failover plans, procedures and vendor assistance, to mitigate risks associated with a system failure during peak periods.

10.5. Complete Backlog of Current Licence Data

Discussion

There currently exists a two-to-three year data entry backlog of Habitat Certificate, hunting and fur licence data. Prior to the implementation of an automated hunting and angling licensing solution, this backlog must be cleared by the Ministry. Current data entry efforts will not be sufficient to clear the backlog, rather, it is expected that the backlog will continue to increase.

Recommendations

It is recommended that the Ministry create an internal project to clear the data entry backlog. Additional, short-term staff will be required to key the necessary data into electronic format.

11. Implementation Considerations and Recommendations

11.1. Vendor Incentives

An automated hunting and angling solution will introduce change for the licence vendors. Licence vendors will be required to update licence issuance processes and work with new technologies to issue licences. At this point of change, it is expected that vendors will strongly evaluate their costs and the benefits of being a licence vendor for the Ministry. It is the Ministry's responsibility to ensure that adequate incentives are in place to successfully attract, motivate and compensate licence vendors.

It is recommended that the Ministry revisit the incentives for businesses to act as licence vendors.

Options for the Ministry to consider include:

11.1.1. Revisit licence commission rates

- Consider increased commission rates
- Consider introduction of scaled or performance-based commission rates such that vendors are encouraged to increase volumes to obtain a higher commission rate

11.1.2. Ministry sponsored licence vending advertising

- Consider assisting vendors in advertising their business:
- List vendor businesses on the Ministry web-site, at Ministry offices or at local events where the Ministry is active.

11.1.3. Develop and Implement a vendor recognition program

- Consider recognizing vendors which exemplify outstanding (related) service to the public.
- Consider a "Vendor of the Season/Year" award
- Consider a "Long Service" award for long term vendors in good standing
- Consider a "Licence Vendor Plus" program for certain vendors
  - Enable businesses to use licence payment process to also receive lease payments on behalf of the Ministry
  - Enable businesses to vend Ministry maps, reports, forms and documents on behalf of the Ministry where reasonable and legal to do so

11.1.4. Create vendor advertising opportunities

- Consider allowing licence vendors to advertise their business in the Hunting and Angling regulations booklet
- Consider allowing licence vendors to advertise their business in other Ministry publications
- Consider allowing licence vendors to advertise their business at Ministry offices, kiosks, and/or web-site.

11.1.5. Foster Improved Vendor/Ministry partnerships

- Consider partnering with vendors to sponsor licence kiosks at trade shows, sporting events or special events
  - Saskatoon Wildlife Federation, Annual Sports & Leisure show
  - Temporary licence kiosks at Provincial and/or Regional parks over the May long weekend
  - Temporary licence kiosks at Fur Block meetings
- Consider partnering with vendors to provide educational opportunities for the public
  - Sponsoring Firearm Safety Certification programs
  - Sponsoring Trapper's Course programs
  - Sponsoring a Hunting Regulations clinic for the public

11.2. Vendor Qualifications and Requirements

The Ministry maintains a set of licence vendor criteria to ensure adequate access to licences are available to customers. At the same time, the Ministry desires the ability to maintain a reasonable number of licence vendors and ensure businesses meet the Ministry's and customer's expectations for quality service. It is expected that the implementation of the automated hunting and angling licensing solution will impact the Ministry's and customer's expectations on licence vendors.

It is recommended, that as part of the automated hunting and angling licensing solution implementation, the Ministry consider a sub-project to revisit the vendor qualifications requirements.

Vendor density (the number of vendors per community based on population)

Discussion

Analysis of the current vendor density shows that many communities have more than the necessary number of licence vendors for the size of the community.

Recommendations

It is recommended that the Ministry:

- Review and revise (as necessary) current vendor density criteria
- Obtain improved geo-referenced data on the location from which vendors issue licences
- Manage and maintain geo-referenced vendor data as a Spatial Data Engine dataset.
- Identify communities which are above or below the desired vendor density
- Formulate a strategy to better align actual to desired vendor density levels

Geographic distribution (the number of vendors per geographic area)

Discussion

The current Ministry expectation is that in rural areas, there should exist one vendor within a 50 km radius to provide adequate access to licences for the public. Analysis of the current vendor distribution shows that the southern portion of the province is well covered within a 25 km radius, approximately 4 times the expected coverage.

Recommendations

It is recommended that the Ministry:

- Review and revise (as necessary) current vendor geographic distribution criteria
- Obtain improved geo-referenced data on the location from which vendors issue licences
- Manage and maintain geo-referenced vendor data as a Spatial Data Engine dataset.
- Identify geographic areas which are above or below the desired distribution level
- Formulate a strategy to better align actual to desired geographic distribution levels

Licence Issuance volumes

Consider new (increased) licence issuance volumes criteria for vendors to assist businesses to evaluate and understand the cost/benefits for being a vendor.

Discussion

The current Ministry expectation is that licence vendors issue a minimum number of licences. Analysis of the current vendor distribution shows that not all vendors meet the Ministry's minimum licence number issuance expectations.

Recommendations

It is recommended that the Ministry:

- Review and revise (as necessary) current vendor licence issuance volume criteria
- Identify vendors which fall below the desired distribution level
- Formulate a strategy to better align actual to desired licence issuance volumes

It is important for the Ministry to understand, that a change in any one licence vendor requirement, will also impact the other factors. For example, a decrease in vendor density can be expected to increase license issuance volumes. A holistic approach will be required as vendor requirements are reviewed.

As the Ministry is aware, changes to vendor qualifications and requirements are very sensitive topics.

It is recommended that any proposed changes be grandfathered into effect such that new criteria only affect new vendor application evaluations.

It is recommended that existing vendors be exempt to new criteria for a period of time of at least three (3) years.

11.3. Vendor Technologies

Discussion

An automated hunting and angling solution will require new technologies be adopted by vendors. The Ministry will need to consider options regarding the type of technologies:

- Ministry supplied technology
- Solution provider supplied technology
- Vendor supplied technology
-

Vendors will require, from time-to-time, support using the new technologies. The Ministry will need to consider options regarding the type of technology support to be provided to vendors:

- Ministry supplied technology support
- Solution provider supplied technology support
- Vendor supplied technology support
- Combinations and permutations of these options

It is possible that a hybrid approach is feasible. For example, a licence vendor may supply their own technology and support and receive higher commissions to assist with costs associated with the equipment purchase and maintenance.

Further, in a few cases, for more remote vendors, sufficient communications may not be currently available to support automated licensing issuance. In these cases, the vendors may be challenged to obtain a telephone or internet communications connection. Current data available to the Ministry is insufficient to determine the exposure of more remote vendors to this potential challenge.

Recommendation

It is recommended that the Ministry entertain all of these technology and technology support options, and include technology and technology support options as a factor in the evaluation of a final solution.

It is recommended that the Ministry engage with the vendor community to determine the exposure of more remote vendors who do not have access to adequate communications to support automated hunting and angling licensing issuance. The Ministry may consider assisting these vendors to obtain the necessary communications (example: satellite telephone, satellite internet service) to enable the vendors to continue to issue licences on behalf of the Ministry.

11.4. Licence Issuance Support

Discussion

Licence vendors will require, from time-to-time, support, advice or direction from the Ministry to help the vendors to issue licences or to follow related processes and procedures.

Recommendations

It is recommended that the Ministry prepare a Licence Issuance Support plan. The Licence Issuance Support Plan will be required to include:

- Licence issuance processes and procedures for in-person licence vendors
- Online help for system functions
- A customer "Help Line" for customers to call in the event customer support is required
- A vendor "Help Line" for vendors to call in the event vendor support is required

The Ministry must understand that licence issuance support will be different for different vendor types and multiple support materials and mechanisms will be required. All vendor types must be addressed and supported, including Ministry field office vendors and the Big Game Draw vendor.

11.5. Remittance Process

Discussion

An automated hunting and angling licensing solution will automate much of the remittance process for both vendors and the Ministry. The automated hunting and angling licensing solution will also maintain, in close-to-real-time, licence vendor transactional data.

The increased timeliness and accuracy of vendor transactional data will be an immediate business function enabler for the Ministry.

Recommendations

At the time of solution implementation, it is recommended that the Ministry modify the vendor remittance process to require vendors to establish an "auto pay trust account through their bank to be used for regular electronic remittance drawdown." This process is successfully used by the Western Canada Lottery Corporation for Video Lottery Terminal remittance processing and would benefit the Ministry in the following ways:

-   Eliminate manual handling of vendor remittance payments (cheques, credit cards)
-   Enable the Ministry to increase remittance frequency
-   Reduces lag time associated with mailing of cheques to improve remittance reconciliation processes
-   Increases the Ministry's ability to detect and address overdue or late remittances

It is not expected that an automated licensing system will provide vendor Auto-Pay functionality for the Ministry.

It is recommended that the Ministry implement the Auto-Pay function at the same time as the automated hunting and angling system and include the Auto-Pay function as part of the Automated Hunting and Angling Licensing implementation project.

It is recommended that the Ministry of Environment engage the Ministry of Finance for expertise and advice on how to best implement the Auto-Pay function.

11.6. Licence Types Evaluation

At implementation time, it will be necessary for the Ministry to re-evaluate the types of licences available for issue. In addition to the current offering of licences new licence types could be considered and implemented:

11.6.1. Shortened term hunting licences

Shortened-term hunting licences, such as 7-day or 3-day licences, could provide less expensive licences for those customers who may only wish to hunt for a single week or weekend each season. Shortened-term hunting licences would be particularly attractive to those hunters who travel to their hunting destinations, such as Canadian-resident or non-resident hunters. Shortened-term hunting licences could increase the number of hunting licences issued.

11.6.2. Reduced limit angling licences

Reduced-limit angling licences could provide less expensive licences to anglers. Reduced-limit angling licences would be particularly attractive to Canadian-resident or non-resident anglers who wish to reduce their costs to fish in Saskatchewan.

11.6.3. Catch and Release only angling licences

Catch and release angling licences could provide less expensive licences to anglers. Catch and release angling licences would be particularly attractive to Canadian-resident or non-resident anglers who wish to reduce their costs to fish in Saskatchewan. Catch and release angling licences would also be attractive to those anglers who enjoy fishing, but whom:

- Do not like to or cannot eat fish
- Cannot keep fish from spoiling in wilderness conditions

11.6.4. Group Hunting licences, reduced issuance of seals/tags

For many hunters, hunting is a social activity. Group hunts would still provide hunters with the traditional fellowship and sport expected, but would also reduce their costs to hunt.

Further, hunters report that often the meat from a single animal provides more than sufficient amounts for a single family. The ability to share wild game amongst a group of hunters would satisfy them.

It is expected that group hunts could serve to increase hunter participation while maintaining animal harvest numbers.

Example: Two licensed hunters share a single moose seal/tag. Once a single animal is harvested, both hunters' licences are cancelled and they have both completed their hunt.

11.6.5. Multi-year Wildlife Habitat Certificates

The Ministry may consider offering multi-year Wildlife Habitat Certificates. This would reduce the administration efforts to issue Wildlife Habitat Certificates each year, and serve to collect Wildlife Habitat Certificate revenues earlier in the cycle.

11.6.6. Combined Annual Licence Package

Similar to the current Youth Game Licence, a combined licence package could be offered at a discounted cost. The combined annual licence package could include a Wildlife Habitat Certificate, a game bird licence, a white-tailed deer licence and an angling licence.

It is important to the Ministry to understand that the implementation of an automated hunting and angling licensing solution will improve the Ministry's ability to offer a wider range of licence types. The current technology limitations will no longer exist, however, fish and wildlife program changes will also be required.

11.7. Licence Design Considerations

The automated hunting and angling system will require that the Ministry redesign new licences. Licence design will have limitations as prescribed by the selected technology solution; however the Ministry will have significant input into the design of new licences.

11.7.1. Licence Colour

Discussion

Currently, the Ministry colour-codes most licences. Colour-coded licences are helpful to help customers, vendors and Ministry staff members identify the correct licence type or year of issue. It is expected that the automated hunting and angling licensing system will require that new licences be printed on black-and-white printers.

Recommendations

It is recommended that the Ministry:

- Focus on licence design to replace functionality currently provided through colour-coded licences.
- Design and implement different designs/layouts for each different licence type
- Consider changing licence background designs annually such that licences are easily distinguishable

11.7.2. Licence Details

Discussion

It is expected that the automated hunting and angling licensing system will generate and print licences and seals/tags at the time of issue. This will immediately enable the Ministry to include additional new information on each licence or seal/tag issued.

Recommendations

It is recommended that:

- the licensee information be printed onto each licence at the time of issue
- the licensee name, address and HATID be printed onto each seal/tag, along with the corresponding licence serial number to associate each tag with a licence, at the time of issue
- a Copy Number be tracked by the system and printed on each licence at the time of issue to indicate how many times the licence has been printed or replaced

11.7.3. Special Instructions/Restrictions

Discussion

Some licences may have special instructions or restrictions which could be printed onto the licence or seal/tag.

Examples:
- Special instructions for CWD related tags
- Allowed Wildlife Management Zones on Big Game Draw licences and seals/tags
- Instructions on Lac La Ronge Angling Endorsements

The Ministry may wish to use licences as a means to remind certain licensees of specific restrictions or events.

Examples:
- New regulations for the season
- Proposed regulation changes for the following season
- To advertise "Free Fishing Weekend"
- Late announcements which were not included in the annual Guides

Recommendations

It is recommended that the Ministry develop a strategy to identify appropriate messages and information to be printed on licences and seals/tags.

11.8. Demonstration of Permission

Discussion

It is anticipated that hunters and anglers will continue to be required to carry on their person, signed paper-based licences to demonstrate their granted permissions. It is expected that Conservation Officer's working in the field, through communications with the Enforcement Center Dispatch, will have access to all licensee information.

Recommendation

It is recommended that the Ministry consider developing new compliance and enforcement policies and procedures for situations where hunters or anglers cannot produce a licence in the field.

11.9. Enforcement Process Analysis

Discussion

The automated hunting and angling system will enable new opportunities and methods for the Ministry to access licence information, and thus, to improve compliance and enforcement services.

Recommendation

It is recommended that, at implementation time, the Ministry re-evaluate and re-design (as necessary) hunting and angling compliance and enforcement related processes.

11.10. Natural Resource Management Analysis

Discussion

New licence and licensee data will be available for use by the Ministry. This new licence and licensee data will enable additional analysis on topics such as pressures on game and fish by the Fish and Wildlife Branch. While it is expected that new uses for such data will be discovered over time, the Fish and Wildlife Branch already have some existing licence and licensee data requirements and excellent ideas for future data requirements.

Recommendations

At implementation time, it is recommended that the Ministry determine and define a set of data requirements for use by the Fish and Wildlife Branch to improve natural resource management decision-making.

11.11. Fraud Detection

Discussion

An automated hunting and angling licensing system will provide new methods for the Ministry to detect and discourage fraudulent activities.

Recommendations

It is recommended that the Ministry prepare a set of business rules for the new system to help identify suspected fraudulent requests for licences. Examples:

- A customer requests a Saskatchewan resident licence, but the verification of the Saskatchewan Health Services Card number fails.
- A customer requests a Saskatchewan resident licence, but the customer is on a restricted list.

  In such cases as these examples, the system should display a generic message to the vendor, indicating there was a problem issuing a licence and that the customer is to go to a Ministry of Environment office to try again. The system should also log the customer's application details and the reason why the licence could not be issued. This information should be displayed and available for Ministry of Environment staff members at the time the customer comes to a Ministry office. A set of procedures will be required for the Ministry of Environment staff members as to how to deal with such customers.

It is recommended that the Ministry determine an efficient and effective manner in which the automated hunting and angling system may reference the list of restricted hunters and anglers.

11.12. System Administration

Discussion

The new automated hunting and angling licensing system will require ongoing system administration and maintenance. New user accounts will be needed. New licence types will be required. Changes to seasons or new seasons will need to be added to the system regularly. Reports will need to be run. This system administration work will require ongoing, dedicated staff effort to be provided by the Ministry of Environment. The majority of system administration requests can be expected to be requested by the Fish and Wildlife Branch.

Recommendations

It is recommended that the Ministry identify and assign system administration duties to at least two Ministry staff members (a primary and a backup) from the Fish and Wildlife Branch. These system administrators will require advanced system training.

It is further recommended that the system administrators be expected to provide system and program support services to system users, including licence vendors.

11.13. System Access and Security

Discussion

This automated hunting and angling licensing system will require a large number of different types of system users including: customers, in-person vendors, Ministry vendors, Big Game Draw vendor, Fish and Wildlife Branch staff members, Compliance and Field Services Branch staff members, Finance and Administration Branch staff members. Within these groups of system users, there may be yet more distinctive user types (for example, wildlife biologists may require different system access than fisheries biologists, although both groups work within the same Ministerial Branch).

Recommendation

During implementation, all distinct system user types must be identified, assessed and defined. All system access must be assessed and designed to ensure data security is maintained at all times.

11.14. System Availability

Discussion

System availability is critical to the success of an automated hunting and angling licensing system. The user-base of the system will be very large (potentially 300,000 or more system users). The system will experience extreme periods of use, where demand for system access will be high. The system will be heavily reliant upon the internet and network services.

Recommendations

It is recommended that the Ministry prepare for the event of a systems or communications failure:

- Prepare manual failover plans for the Ministry
- Prepare vendor procedures to be followed in the event of a system or communications failure
- The Ministry must regularly review and test manual failover plans

In addition, it is recommended that the Ministry prepare manual failover plans, procedures and vendor assistance, to mitigate risks associated with a system failure during peak periods.

It is recommended that the Ministry, where possible, stagger licence availability to minimize system demands during peak periods. For example, work to schedule the application closing dates for the Big Game Draw such that they do not overlap with anticipated peak issuance demands for angling licences.

11.15. Application Integration and Interfaces

Discussion

The automated hunting and angling licensing system will be required to share and exchange data with numerous other systems.

Recommendations

It is recommended that specifications and requirements be developed to interface the new system with existing applications including:

- Ministry of Finance - MIDAS
- Ministry of Health – Saskatchewan Health Card validation check
- Ministry of Environment's Financial Management System (FMS)
- Ministry of Environment's Resource Intelligence Program (RIP)

It is recommended that the Ministry consider additional interfaces:

- Ministry of Environment's bank (to support remittance reconciliation)
- Hunter Safety Certification database (as maintained by Saskatchewan Association for Firearm Education - SAFE)
- Ministry of Environment's Trapping Course database

11.16. Data Conversion

Discussion

A large amount of legacy hunting, angling and fur licensing data already exists within the Ministry of Environment. Much of this legacy data is extremely valuable and cannot be lost to the Ministry. As such, the legacy data must be carried forward for continued and future use.

Recommendations

Specifications and requirements must be developed to convert data from existing systems into the new Automated Hunting and Angling system:

- LIPS
- Big Game Draw database
- RIP (legacy licence data only, minimum 10 years of history)
- Lac La Ronge Angling Endorsement database
- Outfitter's database
- Trapper's course database

12.   Post-Implementation Considerations

12.1. Proof of Eligibility

The current methods used by the Ministry to verify licensee eligibility will continue to work and be effective with an automated hunting and angling licensing solution.   Should, sometime in the future, the Ministry decide to change eligibility regulations; the automated solution may be impacted. At the time of preparation of this study, no relevant Ministry of Environment Acts or Regulations changes were pending which would impact an automated hunting and angling licensing solution.

Technology will exist to enable Firearm Safety certification and Trapper's course checks prior to the issuance of a license. Firearm Safety and Trapper's course databases may exist, however, access to those databases and the quality of the data will be questionable.

13.   Solution Options

13.1. Option 1: Status Quo

Option Description

The existing hunting, angling and fur licence distribution process is manually labour intensive and provides limited information to support program management. Information from the hunting, angling and fur licences is needed to support a number of the Ministry's natural resource management programs, and information on the Ministry's licence vendor partners is required to manage financial aspects of this program. At present, this information is either not available, or not available in a timely manner to support decision making.

Annual Costs

Pre-printing of licences and licence stock $200,000
Software maintenance (increasing over time)..$40,000
Summer students, overtime for manual data entry $15,000
Vendor default (write-offs) $30,000
Total:... **$285,000**

Benefits

No new work, effort or expense will be required by the Ministry to maintain the status quo.

Although highly manual, the current processes are mature and proven.

No change management will be required:
-    The Ministry's staff members are trained and competent to manage the current situation.
-    Vendors are familiar with their roles.
-    Customers are familiar with current licence practices

Duration to Implement

No implementation will be required.

Risks

Technology risks:
- The existing licence software applications are old.
- Due to their age, the existing licence software applications experience problems each time routine network or computer upgrades are performed. These problems require programmer intervention or creative 'work-arounds' to remain functional.
- The existing licence software applications were developed in old, now out-of-date programming languages. Programmer expertise with these languages is limited.
- The primary programmer who developed and maintained the existing software applications has recently retired.

Staff Motivation:
- Much of the existing manual processing is tedious and repetitive for staff which may contribute to staffing turnover in some areas of the Ministry.

Fraud Exposure:
- The current licensing process cannot reduce the levels of exposure the Ministry currently realizes with regard to losses due to fraudulent activities.

Issues

Data Quality
- Manual and redundant data entry is time consuming and error prone.
- Manual data capture is hand-written, often illegible and not useful for downstream processing use.
- There are limited software-based rules in place to ensure and protect the quality of data captured.

Opportunity Loss
- The Ministry collects a large amount of data through the issuance of licences. This data, for the most part, cannot be used by the Ministry to support or expand natural resource management programs.

Timeliness
- Manual data entry creates long time-lags between the point of data collection and the availability of data use.
- The manual processes require significant time between steps for items to be physically shipped between locations and received at the other end.

Performance Measurement
- The ability for the Ministry to measure performance of the licence issuance process is extremely limited due to the lack of information or lack of timely information.

13.2. Option 2: Partnership with Other Licence Issuance Agencies

Option Description

The Ministry partner with another organization to deliver hunting and angling licence issuance services. A partnership could serve to leverage existing technologies and enable automated hunting and angling licence issuance for the Saskatchewan Ministry of Environment.

Costs

Solution Purchase/Lease .... $0 - $500,000
Customization... $750,000

Benefits

Low Implementation Risk
- The partner organization will already have successfully implemented and operated the solution.

Shared costs
- The partner organization will have already invested in a solution and costs could be shared by the Ministry of Environment.

Duration to Implement

Solution dependant .... 6-18 months

Risks

Partner Dependencies
- Any future changes to requirements by the partner organization could directly impact the Ministry's ability to issue hunting and angling licences
- Partner organizations ability (or inability) to meet service levels required by the Ministry of Environment could impact the Ministry's ability to issue hunting and angling licences
- Partner organizations cease to deliver the existing services
- Legislation or regulations in other jurisdictions impact the ability for the partnership to continue

Issues

- Peer Ministries and States have implemented automated hunting and angling licensing solutions with the aid of technology solution provider partners and do not own their solutions.
- The Federal Department of Fisheries and Oceans have potential to provide some technology. Significant custom development will be required to expand that service to meet the needs of the Ministry of Environment.
- Investigations into other issuance and vending organizations in Saskatchewan, with existing technologies, do not and can not meet requirements to issue hunting and angling licences.
- Potential partner organizations who do not issue hunting and angling licences specifically, expressed the following concerns and reservations:
  - That their solutions would not fit the business processes required to support the issuance of hunting and angling licences.
  - Concerns of high risk to their business should their business solution be modified to issue hunting and angling licences.
  - Security concerns related to their business practices to secure highly sensitive information and processes.
  - Concerns that it would not be feasible to modify existing solutions to meet the needs of the Ministry of Environment.
- Potential partner organizations, who do issue hunting and angling licences, generally have legal agreements in place with solution providers to provide software and services and cannot partner with the Ministry to improve their delivery model.

13.3. Option 3: Custom Develop

Option Description

The Ministry engages in a project to custom develop an automated hunting and angling licensing solution.

Costs

Solution design, development and implementation...$1,300,000

Benefits

The solution would be designed and developed specifically to meet the needs of the Ministry of Environment.

Duration to Implement

Solution design, development and implementation.. 24-36 months

Risks

Scope
- The detailed scope analysis for a custom development project requires significantly more research and analysis than would be required for other solution options.
- There is increased risk that details would be overlooked and unspecified until late into the project.
- A development project would be vulnerable to ongoing scope changes.
- The Ministry would be vulnerable to introduction of conflicting requirements by the large number of stakeholders.

Schedule
- A development project would be vulnerable to time delays due to resource assignments, vacations.
- The length of time of the implementation increases potential to the Ministry for outside influences to impact the success of the project.
- The length of time of the implementation increases potential for cost changes during the project. Example: server hardware price increases

Quality

- The Ministry would be responsible to conduct very detailed and thorough quality assurance on all custom developed application modules.
- It is estimated that a team of four (4) Ministry staff would be engaged for twelve (12) months to fully test a custom developed solution.

Human Resources

- Additional human resources would be required to design, develop, test, implement and support the solution as compared to all other options.
- It is estimated that a development team of up to ten (10) members (not including existing Ministry business area staff members) would be required to design, develop, test, and implement a custom developed solution.
- Additional Ministry staff member time would be required to participate in the project. It is estimated that 4 full time equivalent staff members, from all Ministry areas, be required to assist with the detailed design and testing of a custom developed solution.

Cost

- The project would be vulnerable to cost increases due to any scope, schedule, quality, or human resources changes during the project.

Issues

Resources

The Ministry would be required to obtain and allocate additional human resources to aid and assist a development effort, as compared to all other options.

Ongoing Support

The Ministry would be required to support the custom technology solution for internal and external stakeholders.

Custom Software Development Methodology

The current custom software development methodology prescribed for use by Ministry of Environment is not able to successfully support a custom development project of this magnitude. Recent examples of custom developed software solutions for the Ministry have resulted in costs approximately double that which should be required. Further, the pragmatic nature of the prescribed methodology requires eight (8) to twelve (12) times the amount of time to deliver a custom development solution, as compared to other organizations. The cost and time estimates provided above, are based upon industry standard custom software development projects and could not be met with the Ministry's currently mandated custom software development methodology.

13.4. Option 4: Hosted Solution (Outsource)

Option Description

The Ministry obtains services of an existing solution service provider to provide the software and hosting functions.

Costs

Low
Services ....$0.65 per item issued
500,000 items / year...$325,000 per year

High
Services ....$8.00 per item issued
500,000 items / year...$4,000,000 per year

Expected
Services ....$1.25 per item issued
500,000 items / year...$625,000 per year

Benefits

Full solution support would be available from solution providers, including:
- Systems and technical support
- Implementation support
- Ministry user support
- Vendor support
- Customer support

Experienced and knowledgeable solution providers
- The hosted solution service providers are in a well defined vertical market and strongly focused on delivery of hunting and angling licence solutions only.
- Hosted automated hunting and angling solution service providers are experts in the business of hunting and angling licensing service delivery.

Large existing client and service base
- Over 50% of all Canadian provinces and American states provide hunting and angling licences using hosted solution service providers.

Significant transfer of risk from the Ministry to the solution provider, such that much of the project and operational risk would be assigned to the solution provider. Specifically at a minimum:
- software maintenance
- Implementation and software configuration
- Licence vendor hardware supply, configuration and maintenance
- Vendor systems support

The Ministry will have the ability to choose other areas of risk to be assigned to the solution provider including:
- Data conversion
- Vendor service support
- Customer support

Duration to Implement

Solution configuration ....4-6 months

Risks

An automated hunting and angling licensing solution will be required to meet high demand use periods of time. The solution provider must be able to meet or exceed the Ministry's needs during peak period of licence issuance.

A solution provider may also provide the same services to other jurisdictions. In the event that multiple jurisdictions also have high demand periods for licence issuance at the same time as the Ministry of Environment, the risk of service problems increase dramatically.

A solution provider may also provide the same services to other jurisdictions. In the event that multiple jurisdictions have high demand periods for customer support at the same time as the Ministry of Environment, there is a risk that the solution provider may not be able to attend to the Ministry of Environment in a timely manner.

There is always a risk that a solution provider's business becomes unviable and ceases to exist.

Issues

- Any agreement between the Ministry and a hosted solution service provider will be a long-term agreement, the Ministry will be dependant upon the solution service provider to maintain or exceed defined service levels over long duration.
- The Ministry will have limited flexibility to change solution service providers or solutions.
- Current market solution providers are expected to be able to meet the Ministries detailed requirements, however, thorough solution provider evaluation will still be required
- There are a limited number of Canadian-based automated hunting and angling licensing solution providers. Non-Canadian service providers will introduce additional complexities associated with legal contracting, cross-boarder travel, foreign exchange rates, and foreign banking transaction handling.
- The solution provider's ability to support the Ministry and the Ministry's locations throughout Saskatchewan will be a challenge due to the broad geographic distribution and reliance upon third party communications channels (Internet, telephone)
- The solution provider's ability to support licence vendors throughout Saskatchewan will be a challenge due to the broad geographic distribution and reliance upon third party communications channels (Internet, telephone)
- The solution provider's ability to support customers throughout North America will be a challenge due to the broad geographic distribution and reliance upon third party communications channels (Internet, telephone)

13.5. Option 5: Modified Commercial-off-the-Shelf (COTS)

Option Description

The Ministry obtains, configures and implements an existing Commercial-off-the-Shelf technology solution.

Costs

Purchase, Configuration, Implementation Low $660,000
Purchase, Configuration, Implementation High $2,250,000
Purchase, Configuration, Implementation Expected $900,000
Annual Maintenance .... $100,000 / year

Benefits

- The Ministry will have further options on how implementation and operational support will be delivered to the Ministry, vendors and customers.
    - The Ministry may choose to require solution providers to provide implementation and operational support.
    - The Ministry may choose to internalize some or all of the implementation and operational support.
    - It is expected that solution providers will have varying degrees of implementation and operational support abilities.
- Experienced and knowledgeable solution providers
    - There are very experienced and knowledgeable solution providers in the marketplace.
- Large existing client and service base
    - There are existing solution providers with existing automated hunting and angling licensing clients in the marketplace.
- Transfer of risk from the Ministry to the solution provider
    - Some of the project and operational risk will be assigned to the solution provider, specifically at a minimum; software maintenance will be the responsibility of the solution provider.
- The Ministry will have the ability to choose other areas of risk to be assigned to the solution provider including:
    - Implementation and software configuration
    - Data conversion
    - Vendor hardware supply, configuration and maintenance
    - Vendor systems support
    - Customer support

Duration to Implement

Solution configuration .... 9-12 months

Risks

- The solution's ability to meet service needs during peak period of licence issuance.
    - It will be the Ministry's responsibility to ensure that the solution is available during peak licensing periods, that is, that the communications and network infrastructure is designed and ability to meet peak demand system use.
    - It will be the Ministry's responsibility to ensure system availability to online customers and vendors around the clock during (and prior to) open hunting or angling seasons.
- The long-term viability of the solution provider's business.
    - The Ministry should consider a legal agreement to maintain the solution provider's product source code in escrow during the lifespan of any agreement.

Issues

- Any agreement between the Ministry and a solution provider will be a long-term agreement. The Ministry will be dependant upon the solution provider to maintain the solution components over a long duration.
- The Ministry will have limited flexibility to change solution providers or solutions once an agreement has been made.
- The solution provider will be required to meet the Ministries detailed requirements.
- There are a limited number of Canadian-based automated hunting and angling licensing solution providers.
    - Non-Canadian service providers will introduce additional complexities associated with legal contracting, cross-board travel, foreign exchange rates, and foreign banking transaction handling.
- The solution provider may be required, at the Ministry's option, to provide operational and technical support at Ministry locations throughout Saskatchewan.
- The solution provider may be required, at the Ministry's option, to provide operational and technical support at vendor locations throughout Saskatchewan.
- The solution provider may be required, at the Ministry's option, to provide customer support throughout North America.

14. Options Evaluation

14.1. Options vs. Benefits

Options vs. Benefits	Expected Impact (Positive/Negative/Neutral)				
Benefits	Option 1 Status Quo	Option 2 Partner	Option 3 Custom	Option 4 Hosted	Option 5 COTS
Reduce manual processing	Neutral	Positive	Positive	Positive	Positive
Electronically capture data at point of issuance	Neutral	Positive	Positive	Positive	Positive
Provide licensee's ability to demonstrate their granted permission(s).	Neutral	Neutral	Neutral	Neutral	Neutral
Improve customer access to licences	Neutral	Positive	Positive	Positive	Positive
Improve inventory and distribution management effort (use of accountable forms)	Neutral	Positive	Positive	Positive	Positive
Improve 'proof of eligibility' for licence applicants, prior to licence issue	Neutral	Positive	Positive	Positive	Positive
Improve Vendor Incentives	Neutral	Neutral	Neutral	Neutral	Neutral
Improve Remittance Processing	Neutral	Positive	Positive	Positive	Positive
Improve harvested animal identification	Neutral	Neutral	Neutral	Neutral	Neutral
Improve Compliance and Enforcement efforts	Neutral	Positive	Positive	Positive	Positive
Improve Ministry's ability to manage natural resources	Neutral	Positive	Positive	Positive	Positive
Improve Ministry's ability to detect fraud	Neutral	Positive	Positive	Positive	Positive
Improve customer privacy	Neutral	Positive	Positive	Positive	Positive
Improve Ministry's ability to support vendors	Neutral	Positive	Positive	Positive	Positive
Improve relations with external stakeholders	Neutral	Positive	Positive	Positive	Positive
Improve business organization	Neutral	Neutral	Neutral	Neutral	Neutral
Improve ability to administer the Big Game Draw	Neutral	Positive	Positive	Positive	Positive
Provide ability for small, rural or remote vendors to issue licences	Neutral	Negative	Negative	Negative	Negative
Provide ability for Conservation Officers to issue licences in the field	Neutral	Negative	Negative	Negative	Negative

Options vs. Benefits	Expected Impact (Positive/Negative/Neutral)				
Benefits	Option 1 Status Quo	Option 2 Partner	Option 3 Custom	Option 4 Hosted	Option 5 COTS
Improve Data Integrity at the Ministry	Neutral	Positive	Positive	Positive	Positive
Improve Ministry access to licence data	Neutral	Positive	Positive	Positive	Positive
Improve data security	Neutral	Positive	Positive	Positive	Positive
Improve existing software applications	Neutral	Positive	Positive	Positive	Positive
Improve ability to provide technical support.	Neutral	Negative	Negative	Negative	Negative
Improve ability to interface and integrate with other applications	Neutral	Positive	Positive	Positive	Positive
Summary Count – Negative	0	4	4	4	4
Summary Count – Neutral	25	3	3	3	3
Summary Count – Positive	0	18	18	18	18
Overall Benefit	**Neutral**	**Positive**	**Positive**	**Positive**	**Positive**

14.2. Options vs. Requirements

Options vs. Requirements	Expected ability to meet requirements No = 0, Manually = 1, Partially = 2, Fully with Customization = 3 Fully = 4				
Requirements	**Option 1 Status Quo**	**Option 2 Partner**	**Option 3 Custom**	**Option 4 Hosted**	**Option 5 COTS**
Define Hunting and Angling seasons	4	4	4	4	4
Apply for licences	1	4	4	4	4
Check Eligibility	0	3	4	3	3
Issue licences and seals/tags	1	3	4	4	4
Re-issue licences	1	3	4	4	4
Process vendor applications	1	3	4	3	3
Vendor remittance reporting	1	3	4	3	3
Improve Ministry remittance processing	1	3	4	4	4
Provide licensee data for surveys	1	3	4	4	4
Enable field compliance checks	0	3	4	4	4
Verify harvested animals associated with a licence	1	1	1	1	1
Interface data with RIP	1	3	3	3	3
Improve ability to detect fraudulent licence purchases	0	3	4	4	4
Ability to manually issue licences	4	0	0	0	0
Ability to issue licences with telephone or Internet communications	0	4	4	4	4
Ability to issue Outfitter Allocation Licences	1	3	4	3	3
Ability to track Outfitter allocations and issuances	1	3	4	3	3
Ability for Ministry Field Offices to issue licences	4	4	4	4	4
Ability for customers to obtain licences immediately online	0	3	4	4	4
Ability for customers to obtain seals/tags immediately online	0	0	0	0	0
Ability to issue Big Game Draw licences	1	3	4	3	3
Ability to improve Ministry financial processes	0	3	4	3	3

ESTI

Options vs. Requirements	Expected ability to meet requirements No = 0, Manually = 1, Partially = 2, Fully with Customization = 3 Fully = 4				
Requirements	**Option 1 Status Quo**	**Option 2 Partner**	**Option 3 Custom**	**Option 4 Hosted**	**Option 5 COTS**
Ability to electronically collect licence information	0	3	4	4	4
Ability to specify licence validity periods.	1	3	4	4	4
Ability to collect private, personal information to confirm residency status	1	3	3	3	3
Ability to enable the licensee to sign each licence	4	4	4	4	4
Ability to electronically capture Fur licence data	0	3	3	3	3
Ability to electronically capture youth information	1	3	3	3	3
Ability to display a unique hunter/angler identification number on each certificate, licence, seal/tag	0	3	4	4	4
Ability to issue First Nations Wildlife Harvest Permit	1	3	3	3	3
Ability to issue Lac La Ronge Angling Endorsements	1	3	3	3	3
Ability to electronically capture and manage vendor information	1	3	3	3	3
Ability to maintain vendor remittance histories	1	3	4	4	4
Ability to maintain transactional data	1	3	4	4	4
Enable a wide ranges of licences, licence types and prices	1	3	4	4	4
Enable vendors to ascertain which licences are available for issue	1	3	4	4	4
Enable vendors to ascertain when specific licences will be available for issue	1	3	3	3	3
Retain licence application information for future reference	0	3	4	4	4
Test and validate licence applications	0	3	3	3	3

Options vs. Requirements	Expected ability to meet requirements No = 0, Manually = 1, Partially = 2, Fully with Customization = 3 Fully = 4				
Requirements	Option 1 Status Quo	Option 2 Partner	Option 3 Custom	Option 4 Hosted	Option 5 COTS
Deny the issuance of a licence	0	3	3	3	3
Enable/Disable specific vendors from issuing specific licences	1	3	4	4	4
Produce a licence specific to the licensee	1	3	4	4	4
Enable queries and reports on issuance information	0	3	4	4	4
Enable the Ministry to revoke an issued licence	0	3	3	3	3
Ability to conduct lottery for the Big Game Draw	0	3	4	3	3
Ability to process online payments	1	3	4	3	3
Enable security levels for access to licensee information	1	3	4	4	4
Ability to change licences mid-season	0	3	4	4	4
Ensure vendors do not run out of specific licences mid-season	0	3	4	4	4
Limit numbers of specific licences available for issue	1	3	4	4	4
Meet existing Ministry technology service provider technical requirements	0	4	4	4	4
Sum	**44**	**151**	**182**	**173**	**173**
Rank (Best = 1, Poorest = 5)	**5**	**4**	**1**	**2**	**2**

ESTI

14.3. Options vs. Required Stakeholder Change Management Efforts

Options vs. Change Management Efforts	Expected Change Management Effort None = 0 Low = 1 Medium = 2 High = 3				
Stakeholders	Option 1 Status Quo	Option 2 Partner	Option 3 Custom	Option 4 Hosted	Option 5 COTS
Customers	0	1	1	1	1
Licence Vendors	0	3	3	3	3
Finance and Administration	0	3	3	2	2
Compliance and Field Services	0	3	3	2	2
Fish and Wildlife	0	3	3	2	2
Field Offices	0	1	1	1	1
Information Technology Office	0	1	3	1	2
Sum	0	15	17	12	13
Ranking (Best = 1, Poorest = 5)	1	4	5	2	3

14.4. Options vs. Cost

Options vs. Cost	Expected Cost Ranking Ranking (1 = Lowest, 5 = Highest)				
Costs	Option 1 Status Quo	Option 2 Partner	Option 3 Custom	Option 4 Hosted	Option 5 COTS
Cost to Acquire	1	4	5	3	2
Cost and Duration to Implement	1	4	5	2	3
Cost to Maintain	1	4	3	5	2
Resources required to Acquire	1	4	5	2	3
Resource required to Implement	1	4	5	2	3
Resources required to Maintain	5	2	3	1	4
Average	1.67	3.67	4.33	2.50	2.83
Ranking (Low Cost = 1, High = 5)	1	4	5	2	3

14.5. Ranking Summary

Options vs. Ranking Criteria	Rankings Ranking (1 = Best, 5 = Poorest)				
Ranking Criteria	**Option 1 Status Quo**	**Option 2 Partner**	**Option 3 Custom**	**Option 4 Hosted**	**Option 5 COTS**
Benefits	5	1	1	1	1
Requirements	5	4	1	2	2
Change Management	1	4	5	2	3
Costs	1	4	5	2	3
Average	**3**	**3.25**	**3**	**1.75**	**2.25**
Overall Ranking (Best = 1,Poorest = 5)	**3**	**5**	**3**	**1**	**2**

15.   Solution Selection Recommendations

15.1. Recommended Solution Option

Discussion

Five options have been identified for potential ways in which the Ministry may process to obtain automated hunting and angling licensing solutions:

- Maintain Status Quo
- Enter into a Partnership with another licence issuance organization
- Custom develop a solution
- Engage the services of a hosted solution provider
- Obtain a custom-off-the-shelf solution

Recommendation

It is recommended that the Ministry proceeds to identify and obtain either a hosted or commercial-off-the-shelf (COTS) solution to enable automated hunting and angling licence issuance.

15.2. Project Management

Discussion

Identification and implementation of an automated hunting and angling licensing solution is a very large project. The Ministry's approach to execute this project will increase the value of the project and decrease risk. Further, dedicated and professional project management expertise on the project will increase the chances of a successful outcome.

Recommendations

It is recommended that the Ministry initiates two separate projects to identify and implement an Automated Hunting and Angling Licensing solution:

15.2.1.   An Automated Hunting and Angling Licensing Business Analysis project
15.2.2.   An Automated Hunting and Angling Licensing Implementation project

It is further recommended that the Ministry execute the business analysis and implementation as subsequent projects to reduce risk to the Ministry:
- Reduce risk in the event the business analysis process does not produce results as anticipated causing a postponement or cancellation of a solution implementation.
- Reduce risk in the event the Project Manager is not found to be compatible for the implementation of a solution.

It is recommended that the Ministry identifies and assigns a dedicated Project Manager to the Automated Hunting and Angling Licensing projects. Efficiencies may be realized by the Ministry should the same Project Manager be engaged on both projects.

15.3. Detailed Business Analysis

Discussion

As part of the development of this feasibility study, and the business case submission for the Business Advisory Council, a high level business analysis has been performed and documented. This level of analysis is not adequate for the Ministry to properly identify and implement an automated hunting and angling solution. Further detailed business analysis is still required.

Recommendations

It is recommended that the Ministry conduct detailed business analysis to build upon the high level analysis already performed:
- Define the current business processes to a detailed level
- Conduct a industry scan for best practices at the detailed level
- Design future business processes to a detailed level
- Develop detailed business requirement specifications to support the future business processes
- Identify data sources from existing Ministry databases and manual records, for data to be converted into a new licensing database.
- If possible, efficiencies may be realized should the same Business Analyst be able to work on both the Automated Hunting and Angling Licensing Business Analysis project and the Automated Hunting and Angling Licensing Implementation project.

15.4. Communications and Change Management

Discussion

An automated hunting and angling licensing solution will impact a large number of stakeholders. These stakeholders will be required to change their current processes and also support these changes. The Ministry will be required to engage with stakeholders to communicate changes clearly, such that all stakeholders understand the reasons and necessity for change.

Recommendations

It is recommended that the Ministry engage a Communications expert to develop and execute a formal Communications Plan. A Communications Plan will serve inform key stakeholders of changes to Hunting and Angling licensing and serve to establish clear expectations towards these changes. Any Communications Plan should include all key stakeholders including:

- Ministry staff
- Licence vendors
- Customers (hunters, anglers, trappers)
- Hunting and Angling organizations
- Ministry of Finance

A Communications Plan will serve to reduce risks associated with key stakeholder resistance to change.

15.5. Customer Consultation

Discussion

The largest stakeholder group affected by an automated hunting and licensing solution will be the Ministry's hunting and angling licence customers. This stakeholder group will require education and an opportunity to voice their opinions regarding this Saskatchewan Government project.

Recommendations

It is recommended that the Ministry, as part of the Communications Plan, organize and conduct a number of public 'Town Hall' meetings to encourage customer participation in the project. The 'Town Hall' meetings would serve to inform customers of licensing process changes. 'Town Hall' meetings would also provide a forum for customers to voice opinions and provide suggestions to the Ministry.

15.6. Human Resources

Discussion

The Ministry will be required to allocate significant internal human resources to the Automated Hunting and Angling Licensing project. The Ministry must identify and secure adequate internal branch staff for the business analysis and implementation projects.

Recommendations

It is recommended that the Ministry form an internal project team, prior to the project kick-off. This team must represent all areas of the Ministry and be available to participate throughout the business analysis and implementation phases.

It is recommended that the Ministry identify and secure a representative set of vendors to serve as an advisory group for the implementation project.

> The Vendor Advisory Group would act a focus group to add vendor input during the solution implementation. The Vendor Advisory Group could conduct pre-production trials of the new solution. The Vendor Advisory Group should not exceed ten (10) members, but should have representation from the following groups:
>
> - Large private vendors
> - Rural and remote private vendors
> - Outfitter vendors
> - Ministry Field Office vendors
> - The Big Game Draw vendor
> -

15.7. Specific Solution Identification

Discussion

The Ministry's ability to select the best solution to meet the automated hunting and angling licensing requirements is imperative to the success of the solution.

Recommendations

It is recommended that, as part of the detailed business analysis project, the Ministry formally solicit industry service providers to obtain more detailed information aligned with requirements as developed through the business analysis project.

A formal Request for Information (RFI) could be utilized effectively. An alternative to an RFI is to draft and pre-release a Request for Proposal (RFP) and invite industry solution providers to provide feedback and comments upon the draft RFP. The draft RFP method serves to reduce the workload by the Ministry to administer both an RFI and an RFP. The draft RFP method serves to reduce the workload by industry solution providers to respond to both an RFI then and RFP. The draft RFP method also achieves similar objectives of an RFI, as it:

- identifies and engages industry solution providers,
- provides detailed feedback from industry solution providers,
- can provide additional details on expected costs, and
- enables industry solution providers to bring to light any gaps or opportunities not previously identified by the Ministry.

15.8. Procurement and Contract Management

Discussion

The Government of Saskatchewan has existing solution procurement and acquisition policies, processes and expertise in the Ministry of Government Services, Purchasing Agency.

Recommendation

The Ministry, following established processes, to undertake a Request for Proposal (RFP) to identify and secure an Automated Hunting and Angling Licensing solution. The RFP should be targeted specifically to identify potential providers for hosted or COTS solutions. The Ministry must exercise diligence to ensure the RFP very clearly specifies all expected deliverables, timelines, quality levels and project scope.

The Ministry may wish to impose financial holdbacks and/or penalties as part of any contract with solution providers to mitigate risks due to late or incomplete deliverables.

It is recommended that a long term Service Level Agreement(s) be prepared and executed with all relevant service providers prior to Production rollout of the solution.

It is recommended that, if appropriate to the selected solution, the Ministry require that software source code be held in escrow for the duration of any agreement to reduce risks associated with software provider viability.

15.9. Implementation Plan

Discussion

The implementation of an automated hunting and angling licensing solution will take several months to complete. This time period will depend upon the specific solution selected by the Ministry, but is not expected to take less than eight (8) months and should not take more than sixteen (16) months to complete. These time frames will also depend upon the time of year in which the Ministry is able to begin the implementation work.

Recommendations

It is recommended that the Ministry, together with the selected solution provider and the ITO develop a detailed implementation plan and that the implementation be conducted in stages:

Stage 1: Wildlife Habitat Certificates and Saskatchewan Resident Upland Game Bird licences
- Low level of complexity
- Low volume

Stage 2: Angling Licences
- Low level of complexity
- High volume

Stage 3: Big Game, Youth Hunting, and Fur licences, seals/tags
- Increased level of complexity, build upon previous success
- Low volume

Stage 4: Specialized licences
- include:
    - Canadian and Non-resident Upland Bird licences,
    - Lac La Ronge Endorsement,
    - First Nations Wildlife Harvest Permit,
    - Outfitter Allocation Licences
- Increased level of complexity, build upon previous success
- Low volume

Stage 5: The Big Game Draw
- Increased level of complexity, build upon previous success
- Low volume

15.10. Implementation Pilot Projects

Discussion

The implementation of the automated hunting and angling solution will take a significant amount of time to conduct.   It is expect that some vendors will be in a position to issue licences through the automated solution before other vendors.

Recommendations

It is recommended that the Ministry consider piloting some stages of the implementation, with a specific group of vendors, prior to moving to full Production use of the solution. This will necessitate a hybrid licence issuance scenario for an interim period, where some licences of the same type will continue to be issued manually, while others will only be available electronically.

It would be logical for Ministry of Environment field office vendors to act as the pilot sights:
- Field offices will already have adequate technical infrastructure in place to enable automated licence issuance
- Any initial unforeseen rollout issues will be contained and addressed within the Ministry
- Private sector vendor technical rollout may be performed in parallel during the pilot period

15.11. Data Conversion

Discussion

A large amount of legacy Ministry data will need to be converted for use in the new system. The identification of specific legacy data and the preparation of that data for use in the new system will be a large and complex job.

Recommendations

It is recommended that the Ministry prepare a detailed data conversion specification:
- Identify data elements and source locations for conversion into the new system
- Identify data transformations required for conversion into the new system
- Identify target locations for converted data.

It is recommended that a data conversion project be initiated and operated as a separate sub-project within the implementation project. This enables the data conversion work to utilize the same project manager as the larger implementation project.

It is recommended that the Ministry identify and allocate specific Ministry staff members, from appropriate business areas, to provide subject matter expertise to the data conversion work.

15.12. Quality Assurance and Implementation Change Management

Discussion

The Ministry will be responsible to ensure the quality of an automated hunting and angling licensing solution. Significant amounts of solution testing will be required.

Recommendations

It is recommended that the Ministry prepare a Quality Assurance Plan to ensure each project deliverable meets or exceeds the Ministry's requirements and expectations. It will be important that the Ministry identifies and secures adequate internal Branch staff members to perform the quality assurance work. A formal sign-off process should be implemented to ensure each and every aspect of the solution is operating as expected, prior to authorizing that the solution be accepted as delivered.

Further, it is recommended that the Ministry make use of a formal Change Management methodology and toolset to effectively manage:
- Project scope changes
- Project issue reporting and resolution
- System bug reporting and resolution
- Software promotion management
- Data conversion batches management

15.13. Production Rollout

Discussion

The rollout of an automated hunting and angling licensing solution into a Production environment will be a complex task. Formal planning will be required to optimize the 'Rollout to Production' process.

Recommendations

It is recommended that the Ministry prepare a solution Production Rollout Plan. Adequate time and resources will be required to rollout the changes to the vendor community.

It is recommended that the Ministry ensures that adequate training, materials and support are made available to:
- Ministry staff
- Vendors
- Customers

It is recommended that, through the Communications Plan, the Ministry ensures that the new solution be publicized and promoted to encourage use of the new solution by customers.

15.14. Project Completion

Discussion

Once the new system is fully implemented, there will still be some work remaining for the Ministry to complete.

Recommendations

It is recommended that the Ministry conducts formal project completion activities to close out the project.
- Prepare a project completion report, with recommendations towards solution operations, future solution enhancements.
- Document, publicize and archive project "Lesson's Learned"
- Document evaluations of project teams
- Provide evaluations to project team members
- Conduct post-implementation evaluations by vendors and customers
- Release appropriate media announcements
- Close-out appropriate contracts with external suppliers

It is recommended that the Ministry conduct a formal hand off of the solution, from the project implementation team to a permanent operational team.
- Conduct knowledge transfer exercises
- Provide the operational team with appropriate source-code, documentation, and outstanding decision items
- Archive project documentation

16.   Executive Summary

The automation of hunting and angling licensing will serve to assist the Ministry of environment to fulfill its mandate as a steward of Saskatchewan's natural resources. An automated hunting and angling solution will also better position the Ministry to prepare and adapt to new challenges as they arise in the future.

The implementation of an automated hunting and angling licensing solution will provide value to the Ministry of Environment, specifically, in regards to the guiding value propositions:

Value Proposition 1: Natural Resource Management

The automation of hunting and angling licensing will improve the Ministry's ability to access timely and accurate information, analyze the information, make decisions, and act on those decisions. In addition, an automated hunting and angling licensing solution will provide the Ministry with the metrics to improve its ability to measure the effectiveness of hunting and angling licence issuance.

Value Proposition 2: Customer Service

The automation of hunting and angling licensing will improve access to licences and related services for the Ministry's customers and improve customer's ability to conduct their respective activities as a partner in the ongoing natural resource management for Saskatchewan. The new ability for Canadian and non-residents to pre-purchase licences before planning their trip to Saskatchewan will greatly improve Saskatchewan's image as visitor-friendly tourism and recreational destination.

Value Proposition 3: Compliance and Enforcement

The automation of hunting and angling licensing will improve access to timely, accurate information for the Ministry's Compliance and Enforcement personnel and improve their ability to analyze information, make decisions and take action.

Value Proposition 4: Financial Administration

The automation of hunting and angling licensing will improve the Ministry's ability to account for each financial transaction and understand the value of its assets and liabilities related to the licensing function. An automated hunting and angling licensing solution would improve the Ministry's ability to access detailed financial data for analysis, reporting, decision making and action in a timely fashion and ensure the Ministry can remain accountable for its use of public funds.

These guiding value propositions have provided a method and structure to analyze the business of hunting and angling licensing. This business is only a small part of the overall natural resource management which ultimately serves to protect the symbiotic relationship between nature and humans. We are fortunate, that once again today there is a small herd of wild bison roaming free on the grasslands of Saskatchewan. Through persistent and prudent resource management practices, including the licensing of hunting, angling and trapping, nature has an opportunity to rejuvenate, rebalance and self-regulate the wild bison population in Saskatchewan. Likewise, an automated hunting and angling licensing solution will provide the Ministry of Environment an opportunity to rejuvenate, rebalance and self-regulate its licensing program and continue to fulfill its mandate to work with "stakeholders across the province to protect and conserve our natural resources."

Appendix A: Key Stakeholder Consultations

During the course of the feasibility study research, consultations were held with the following key stakeholder groups:

Customers

- Saskatchewan Resident hunters
- Canadian resident hunters
- Non-resident hunters
- Junior hunters
- Saskatchewan resident anglers
- Saskatchewan resident senior anglers
- Canadian resident anglers
- Lac La Ronge anglers
- Child anglers
- Fur Trappers

Vendors

- Private sector business licence vendors
- Ministry of Environment field office vendors
- Ministry of Environment Big Game Draw vendor

Ministry of Environment, Fish and Wildlife Branch

- Branch executive staff members
- Business Management Unit
- Resource Allocation Section
- Biodiversity Conservation Section
- Biodiversity Assessment and Planning Unit
- Fisheries Management Unit
- Fisheries Field Services
- Wildlife Management Unit

Ministry of Environment, Compliance and Field Services Branch

- Branch executive staff members
- Compliance Services Section
- Enforcement and Investigations Section
- Enforcement Centre Dispatch
- Specialized Enforcement Unit
- Investigations Unit
- Northern Field Services
- Southern Field Services
- Provincial Inquiry Line

Ministry of Environment, Finance and Administration Branch

- Branch executive staff members
- Financial and Property Management Section
- Southern Support Services, Licensing staff members
- Revenue/Accounts Receivable Processing Unit

Appendix B: Extra-Jurisdictional Research

During the course of the feasibility study research was conducted with other jurisdictions to identify potential solution options, best practices and lessons learned towards the automation of licensing:

Government of Saskatchewan Ministries and Crown Corporations

- Ministry of Agriculture
- Ministry of Finance
- Ministry of Health
- Ministry of Highways and Infrastructure
- Ministry of Justice
- Saskatchewan Gaming Commission
- Saskatchewan Government Insurance
- Saskatchewan Information and Privacy Commissioner
- Saskatchewan Information Technology Office
- Saskatchewan Liquor and Gaming Authority

Extra-Jurisdictional Research

- Hunting, angling and trapping regulations and/or web-sites were reviewed for the following peer jurisdictions:
    - All 10 Canadian provinces
    - All 3 Canadian territories
    - Environment Canada, Department of Fisheries and Oceans
    - Environment Canada, Canadian Wildlife Service
    - All 50 states in the United States of America
    - 6 international countries
- Hunting and/or angling licences were purchased from the following jurisdictions
    - Province of Saskatchewan, hunting and angling licences
    - Environment Canada, Department of Fisheries and Oceans fishing licence
    - Province of Alberta, Canadian-resident hunting licence
    - State of South Dakota, non-resident angling licence
- Solution providers
    - Hosted technology solution providers
    - Commercial-off-the-shelf technology solution providers
    - Custom development solution providers
- Non-sector groups
    - Western Canada Lottery Corporation
    - Airline and cruise line ticketing
    - Concerts, sports and events ticketing
    - Border customs agencies

Appendix C: Customer Comments

During the course of the feasibility study, comments and suggestions were received from hunters, anglers, and trappers. These comments were provided by a random sample of individual hunters, anglers and/or trappers and are not associated with any organized group or association. The comments received, have been listed below.

- I would like to be able to buy a cheaper (angling) licence and keep fewer fish. Like in Manitoba.
- I would like to be able to purchase online and print licence off computer – pay with plastic – as in BC.
- The habitat permit to include fishing (angling) as well as hunting – i.e. like Alberta
- Lower the fishing licences for non-residents – i.e. like Alberta to bring in more tourists
- Use plastic licences that can be punched to add to it – i.e. pay for new licence by adding to it like at Tim Hortons
- Use 5 year licences (or 3 year) so licences would be cheaper by the year
- Why can't I use my Management Zone white-tailed deer tag for the special allocation in Zone 54?
- We would like to see moose party licences as well as elk party licences included in the big game draw.   We want to hunt together, but we don't need venison from 2 moose or elk and would be happy to share a tag. This would save us money and let someone else hunt as well.
- Have licences delivered to vendors just a little bit sooner than three days before you go hunting. I had to wait until three days before going for elk - archery season to get my tag. That was cutting it a little closer than I would have liked , as I have to drive into the city on a special trip to get it because all other preps were done except for that one.
- Should be able to purchase licences online. Vender may not have the license person is after, machine which prints out license would work as there would be no limit to licences sold at any vender.
- One time use tags similar to a customs seal might be easier to use
- should allow out of province people to participate in the Big Game Draw
- I come home each fall and enjoy hunting upland birds with family and friends. A full season non-resident upland game bird licence is very expensive for a 1 or 2 day hunt. A cheaper 1 or 3 day licence would be great
- I've used tagging systems in 4 provinces to date, and I must say the system used in Saskatchewan is the most "user-unfriendly" of all. The system makes for a very lengthy initial purchace (reducing efficiency for the vendor) and an absolutely God awful experience in the field; both hands on and confusing. As for the initial search for tags, our first 3 stops were "sold out". We ended up meeting up with a C/O in a small town to acquire tags. Can we not keep this simple while still ensuring compliance?
- I own two cottages on Pasqua Lake. Every year, countless members of our family come up there and enjoy Saskatchewan. When are you guys going to make fishing licenses available on-line. To my knowledge, every state does so...I hope you guys choose to do so. We always run into vendors who don't have enough licenses and we end up driving around until we find one who is well stocked. Taking care of all licenses is cheaper for you, requires less paper and paper work, is faster, and one never runs out. Is it in your future plans?
- As a Saskatchewan resident, I recently purchased an angling licence in South Dakota.
  - The whole process took less than 10 minutes.
  - After starting the process by providing my drivers license, the store clerk placed a few demographic items on the sheet.

- After that, she placed a call. After being on hold for less than a minute, she indicated to the person on the phone that someone from Canada wanted a day angling license.
- I once again provided my name and address.
- It was pointed out to me (after I asked) that a non-res license was the same as a non-state license.
- Questions relayed to me by the clerk (from the person on the phone) were in "Canadian" not "US". IE. I was asked for my postal code.
- As a final piece of information, I was asked for the last for digits of my SIN number (yes, they asked for SIN, not social security number).
- I was given my license, paid my $16 bucks, and left.

- Last year, in addition to doing a non-resident hunt in Saskatchewan, my wife and I did a non-resident hunt in Alberta. Our host for the hunt was an avid but non-professional hunter who was keen to show us big-game hunting in the Grande Prairie area. On the advice of our friend my wife and I were both going after white tail deer. To get set up we went to a fish and game shop in Grande Prairie with our host. As a non-professional but registered hunter he could sign for one or two hunters. I believe our host also had to pay something for hosting us. He paid his fee signed for both of us. As his guests all we had to produce was our BC drivers' licenses and cash (approximately $150 a person). That being said the paper-work process was arduous. We had to get an Alberta hunters' card (called a Wildlife Identification Number) and a license. The person attending us had difficulty with the process and it took approximately an hour of fully engaged effort. At the end of the process we received our licences on the spot but the Alberta hunters' card came in the mail to our home after several months. As I understand it if we were to go back to Alberta our licensing cost would go down a bit because we would not have to pay for our hunters' card again. There were a lot of rules, nobody was completely clear on the rules, and a lot of money changed hands for the privilege of hunting a white tail deer over a weekend.

Appendix D: North American Wildlife Enforcement Officer Association survey

The North American Wildlife Enforcement Officer Association (NAWEOA) annual conference was held during the course of research for this feasibility study. A survey on automated hunting and angling licensing was prepared and administered to the conference attendees. In total, 192 responses were received from wildlife enforcement officers throughout the United States and Canada.

The survey served to gather extra-jurisdictional information, best practices and lessons learned from peer licensing issuance agencies. Potential solution suppliers were identified. NAWEOA member contacts were made for follow-on questions or to obtain further contact at their organization.

Some examples of information gathered from the surveys have been grouped and tabulated below.

Important Aspects of Automated Licence Issuance

The most important aspects of an automated hunting and angling licensing solution were listed as:

Important Aspects of an Automated Licensing Solution	Response Count
Access to up-to-date, accurate licensing information	76
Ease of use for Officers	48
Customer convenience to purchase a licence	25
Access to information in the field	24
Fraud detection	22
Ability to perform residency checks	15
Improved accountability	1

Aspects to Avoid with Automated Licence Issuance

Aspects to avoid with an automated hunting and angling licensing solution:

Aspects to Avoid in an Automated Licensing Solution	Response Count
Insufficient fraud detection or licence duplication	36
System/communications overload during peak issuance periods	16
Complicated solutions	14
Poor licence materials, poor licence design	12
Difficulty to obtain tags	8
Insufficient training	7
Poor, incomplete or under staffed implementation team/plan	6
Privacy issues (display of customer ID numbers, such as SIN, SSN)	6
Unsuitable licence vendors	5
Insufficient business rules	3
Third-party or poor customer service/support	2

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Appendix E: Glossary of Terms and Acronyms

Accountable Forms – serial numbered forms or documents, which are the property of the Government of Saskatchewan prepared for re-sale and having an associated monetary value.

Angle, Angling – means (i) fishing by means of a line and hook or a rod, line and hook; (ii) bow fishing; or (iii) underwater spear fishing. (source: *The Fisheries Regulations*)

Canadian Resident – means a person who has his principal residence in Canada and who is a Canadian citizen or has resided in Canada for the 12-month period preceding the date of his application for a licence (source: *The Wildlife Regulations, 1981*). For the purposes of Saskatchewan hunting, angling and fur licensing, the person is also not a resident of Saskatchewan.

Convenience sampling – a nonprobability sampling approach where samples from a population are identified in a 'convenient', non-statistical method rather than through scientific or probability sampling methods.

COTS – **C**ommercial-**O**ff-**T**he-**S**helf software. These are existing software packages which have previously been developed and deployed multiple times and designed such that the package may be implemented, for similar purposes, for multiple customers.

Endorsement – an additional, extended permission

FAM - **F**inance **A**dministration **M**anual, a consolidation of the Government of Saskatchewan's Treasury Board's policies and the Provincial Comptroller's directives.

FMS - **F**inancial **M**anagement **S**ystem, the Ministry of Environment's accounting system.

Fur Block (Fur Conservation Block) – in general, non-leased provincial (Crown) land has been designated as a Fur Conservation Block and may be divided up into smaller areas as designated by the Ministry of Environment. The complete definition of Fur Conservation Block may be found in *The Wildlife Regulations, 1981*.

HAL- The name for the Ministry of Environment's Automated **H**unting and **A**ngling **L**icensing Solution project.

HATID - A proposed unique **H**unter, **A**ngler and **T**rapper **Id**entification number, to be issued to all hunters, anglers and trappers upon the issuance of a licence through an automated hunting and angling licensing system.

Hunt, Hunting - includes taking, wounding, killing, chasing, pursuing, worrying, capturing, following after or following on the trail of, searching for, shooting at, trapping, setting snares for, stalking or lying in wait for any wildlife, or attempting to do any of those things, whether or not the wildlife is then or subsequently captured, wounded or killed (source: *The Wildlife Act, 1998*)

ITO - The **I**nformation **T**echnology **O**ffice, the Government's information technology services provider.

Licence Serial Number – a unique identifier printed onto each licence.

LIPS - **L**icence **I**nformation **P**rocessing System, currently used by the Ministry of Envrionment's Finance and Administration Branch to track licence allocations and licence vendor information.

MIDAS - **M**ulti-**I**nformational **D**atabase **A**pplication**S**, the Government-wide financial management system, administered by the Ministry of Finance.

Migratory game bird - includes any game bird protected by the Migratory Birds Convention Act (Canada), as amended from time to time, or the regulations made under that Act (source: *The Wildlife Regulations, 1981*)

Non-resident - means a person who is neither a Saskatchewan resident nor a Canadian resident (source: *The Wildlife Regulations, 1981*)

RES - Ministry of Finance's Revenue Expenditures System (RES), the predecessor to the MIDAS system.

RIP - **R**esource **I**ntelligence **P**rogram, a software database used by Conservation Officers.

Saskatchewan Resident - means a person who is a Canadian resident, has his principal residence in Saskatchewan and has resided in the province for the three months preceding the date of his application for a licence; or is a member of a regular force of the Canadian Armed Forces or of the Royal Canadian Mounted Police and is stationed and residing in the province. (source: *The Wildlife Regulations, 1981*)

Seal (Tag) - means the portion of a licence that is required to be detached from the licence and cancelled immediately after wildlife is killed, or a tag that may be supplied with a licence (source: *The Wildlife Act, 1998*)

SHSC - **S**askatchewan **H**ealth **S**ervices **C**ard, a card issued by the Ministry of Health to Saskatchewan residents.

Trapping, Normal trapping operations - means the taking of fur animals by means of traps, where the trapper has several traps operating at one time and checks them in a planned and regular manner (source: *The Wildlife Regulations, 1981*)

Trap - includes a spring trap, snare, deadfall, box or net or any other device used to capture any wildlife (source: *The Wildlife Regulations, 1981*)

WMZ - **W**ildlife **M**anagement **Z**ones, geographic areas established by the Ministry of Environment to enable regional